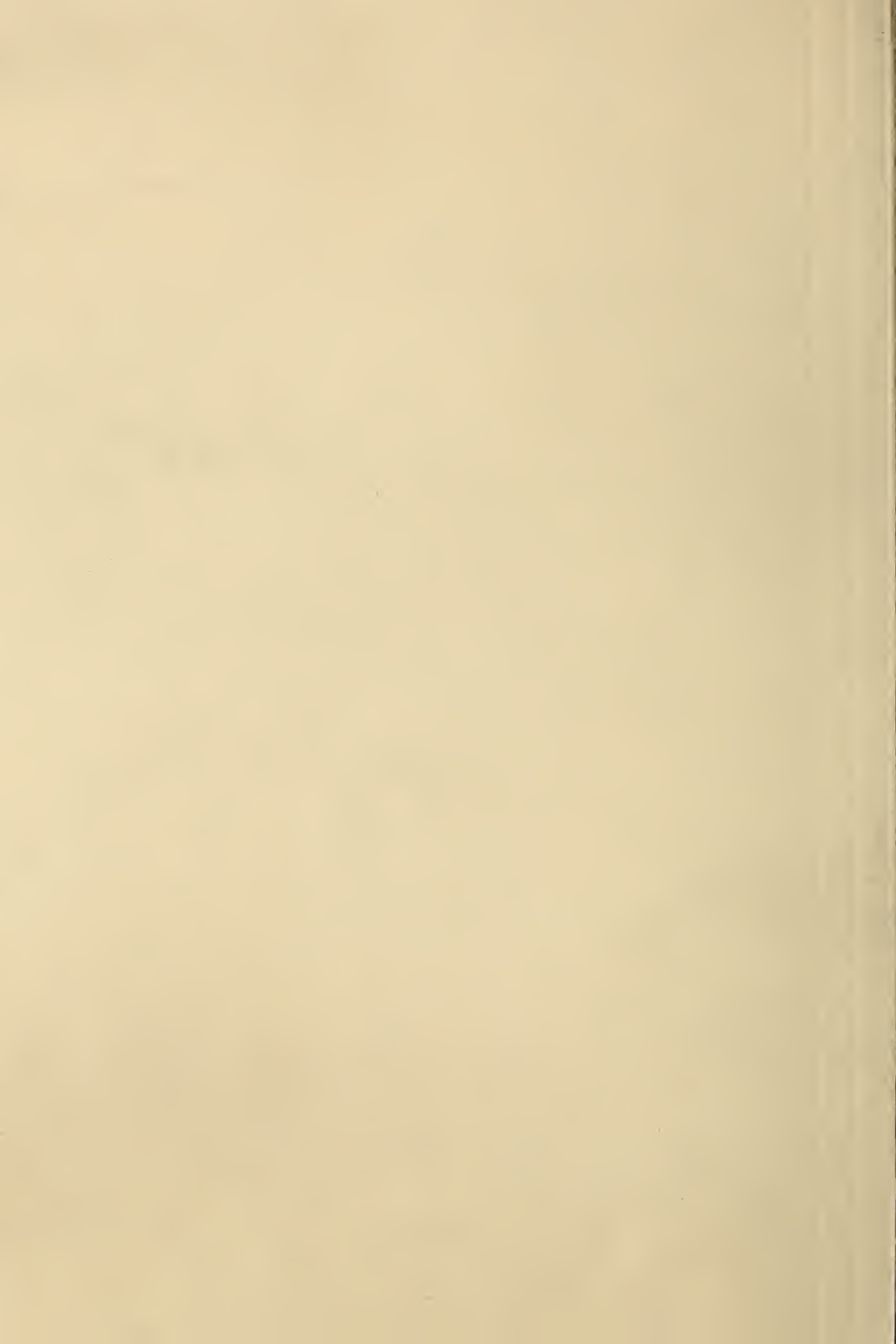


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Cleanings in Bee Culture



VOL. XLII. OCT. 1. 1914, NO. 19.

The Old Original 1853 Edition of Langstroth Reprinted Now Ready for Distribution

One of the Most Charmingly Written and Entertaining Books that was Ever Published

It so stirred A. I. Root in the early days that he wrote: "What a gold mine that book seemed to me! Never was romance so enticing—not even Robinson Crusoe; and, best of all, right at my own home I could live out and verify all the wonderful things told therein."

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This will preserve the original for future generations.
G. M. DOOLITTLE.

Marietta, N. Y., April 16.

I am much pleased with the reprint which has come to hand.

Amherst, Mass., April 15.

B. N. GATES.

It is very interesting—not only from a sentimental but from a practical standpoint.

Guelph, Can., April 21.

MORLEY PETTIT.

The dear old man was one of God's very own; and to have this reminder of him on my bookshelf will give me much pleasure.

A. J. COOK,

State Commissioner of Horticulture.

Sacramento, Cal., April 18.

It seems good to read again this charming work. It must ever remain to the American beekeeper a classic, both instructive and fascinating.

Middlebury, Vt., April 15.

J. E. CRANE.

It is well to have Langstroth reprinted; and if all would read it, many would be saved from going over well-thrashed straw. I have several of the early editions, and am glad to add this to them.

ARTHUR C. MILLER.

Providence, R. I., April 20.

I have a copy of the reprint of the 1853 Langstroth. I have long admired the writings of Langstroth, and had read his original edition with great interest. It is especially interesting in that he discusses some of the points that are annually "discovered" by others who are unfamiliar with the literature on bees. I feel that it might benefit American beekeepers to become familiar with this book, and trust that it will have a wide distribution. The book is a classic, and should be known to all good beekeepers.

E. F. PHILLIPS.

Washington, D. C., April 16.

I am much pleased to get the reprint of Langstroth, and I thank you heartily for the same. I have not yet had a chance to look it through, but did look into it enough to recognize the dear old book. It was the very first thing I ever read on bees, and I read it through the first night—the night of the day I captured my first swarm. At least I read it till I dared not sit up any longer, lest my father arrive on the scene with a slipper. I did not dare look at the clock when I finally did go to bed. Yes, I got the fever bad.

ALLEN LATHAM.

Norwichtown, Ct., April 30.

"Entered according to Act of Congress in the year 1853, by L. L. Langstroth." Entered at the same time, without any act of Congress, by means of the book containing the aforesaid legend and the hive which accompanied it, a flood of light upon the dense darkness that had from the foundation of the world enshrouded the secret and mysterious doings of the little busy bee within its enclosed domicile.

That divides the history of beekeeping into two distinct periods—the long ages before 1853, and the little span of threescore years since then. The rapidly diminishing few who have lived in both periods are in best position to appreciate the immense difference in the two. As we scan again the pages of the old—and ever new—book, "Langstroth on the Hive and the Honeybee," how memories arise of "the grand old man" with the inventive brain and loving heart, and with the gentle voice we loved so well to hear! What a blessing that the same man who could make such a revolutionary invention could also write so beautifully! Whatever other books the beekeeper may or may not have, he is likely always to cherish the one classic from the graceful pen of the beloved Langstroth.

Marengo, Ill.

C. C. MILLER.

While some of our readers may, perhaps, feel that this work would be out of date, the fact is,

FATHER LANGSTROTH WAS 60 YEARS AHEAD OF HIS TIME.

So much so that he revolutionized beekeeping throughout the world.

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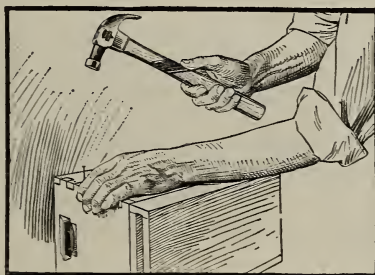
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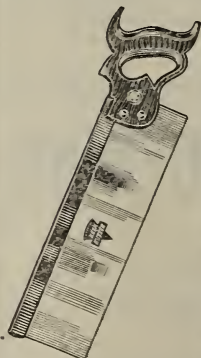
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HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NATIONAL BEEKEEPERS' ASSOCIATION GRADING-RULES Adopted at Cincinnati, Feb. 13, 1913.

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I. FINISH.

1. *Extra Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side exclusive of the outside row.

3. *No. 1*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. *No. 2*.—Comb not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III. WEIGHT.

1. *Heavy*.—No section designated as heavy to weigh less than fourteen ounces.

2. *Medium*.—No section designated as medium to weigh less than 12 ounces.

3. *Light*.—No section designated as light to weigh less than ten ounces.

In describing honey, three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: *Fancy, white, heavy (F-W-H)*; *No. 1, amber, medium (1-A-M)*, etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour, or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

FANCY WHITE.—Sections to be well filled, comb firmly attached to all sides and evenly capped except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond the wood; wood to be well cleaned; no sections in this grade to weigh less than 13½ ounces.

No. 1.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey white or very slightly off color. Combs not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

CHOICE.—Sections to be well filled; combs firmly attached; not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb, and cappings from white to amber, but not dark; wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

No. 2.—This grade is composed of sections that are entirely capped, except row next to wood, weighing from ten to twelve ounces or more, also of such sections that weigh 12 ounces or more, and have not more than 50 uncapped cells all together, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

EXTRACTED HONEY.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

STRAINED HONEY.—This is honey obtained from combs by all other means than the centrifugal extractors, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

CHICAGO.—There is a firm feeling in the choice grades of white comb honey, and sales are now being made chiefly at 16; and where the wood section is allowed for, it is bringing 17. The No. 1 and off grades bring from 1 to 3 cts. per lb. less. Amber grades are ranging from 10 to 13. Extracted white grades, such as clover and linden and button sage, sell chiefly at 9 cts.; western white alfalfa sells at 7 to 8. Amber grades range from 6 to 8, according to color and quality. The beeswax market is easier; but yellow wax, free from sediment, brings 34 to 35.

Chicago, Sept. 15. R. A. BURNETT & Co.

Honey reports continued on page 5.

PERFECTION IN WAX RENDERING

has been reached by our process. Ship us your OLD COMB AND CAPPINGS, and secure highest returns. . . . Write for prices and full information.

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"The Busy Bee Men"

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Supplies

The season just passed has demonstrated more clearly than ever the necessity for being prepared for a honey-flow **BEFORE** it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in new unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—six per cent for cash orders sent in October, the discount diminishing one per cent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices has as yet been announced, and you may, therefore, order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

If your season's crop of honey is not yet disposed of, we can give you a good price and handle it promptly. Send samples of extracted and full information as to containers, flavor, quantity, price, etc. We also handle comb honey.

C. H. W. Weber & Co.

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Cincinnati, Ohio

Gleanings in Bee Culture

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BOSTON.—No. 1 and fancy new white comb honey is quoted at 16 to 17; fancy white extracted, 11, 60-lb. cans. Beeswax, 30.
Boston, Sept. 25. BLAKE-LEE Co.

SCHENECTADY.—But very little doing in our market at this date yet, and no established prices. Clover was a very light crop, and buckwheat is not ready to ship to market. We look for better prices than last season.
CHAS. MACCULLOCH.
Schenectady, N. Y., Sept. 17.

NEW YORK.—We quote clover, comb, fancy, at 16; clover, comb, No. 1, 14; clover, comb, No. 2, 12 to 13; clover, extracted, 8 to 9; Southern extracted, per gallon, 50 to 80; West Indian extracted, per gallon, 45 to 50. As for beeswax, most of this business is in range of 30 to 35 for average fine goods.
New York, Sept. 15. JOURNAL OF COMMERCE.

CINCINNATI.—There is very little demand for honey at the present time. However, we are selling our comb honey from \$3.00 to \$4.00 per case, according to the quality and who is buying it. Our extracted honey, for the best white, brings 7½ to 10 in crates of two 60-lb. cans; for amber extracted, 5 to 7½. For choice bright yellow beeswax we are paying 30 cts. delivered here.
Cincinnati, Sept. 18. THE FRED W. MUTH Co.

ST. LOUIS.—We have had a better demand for honey lately, and expect an improvement in this article from now on. We are quoting No. 1 white-clover honey, 24 sections to the case, at \$3.35 to \$3.50; No. 2, \$3.00 to \$3.25; light amber and amber, \$2.50 to \$3.00; extracted honey, 5 to 7½, according to quality, flavor, and quantity. Beeswax, prime, 31½; impure and inferior, less.
St. Louis, Sept. 22. R. HARTMAN PRODUCE Co.

ZANESVILLE.—Not much new honey is arriving as yet. There is a fair demand, particularly for comb, best grades of which wholesale at 18 to 20. In a jobbing way prices are 1 to 2 cts. less. There seems to be a better supply and less demand for extracted. We quote best quality white in 60-lb. cans at 9 to 11, according to quantity and quality. For beeswax, producers are offered 31 to 32 cash; 2 cts. more in trade.
Zanesville, Sept. 17. E. W. PEIRCE.

KANSAS CITY.—The receipts of comb honey are more liberal. The demand is good. There is no change in extracted. The receipts of new crop are very light, with demand improving. We quote No. 1 white comb, 24-section cases, at \$3.15 to \$3.25; No. 2 ditto, \$2.75 to \$3.00; No. 1 amber ditto, \$3.00; No. 2 ditto, \$2.50 to \$2.75; extracted white, per lb., 8; amber, 7 to 7½; dark, 4½ to 5; No. 1 beeswax, 28; No. 2, 25.
September 15. C. C. CLEMONS PRODUCE Co.

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Gleanings in Bee Culture

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NO. 19

EDITORIALS

The Army Worm Not Destructive to Clovers

THE awful army worm, which we have been reading so much about in the papers, that destroys our grain, our grass, and our lawns, it is said will not attack the clovers. Why this is so we do not know. As clover is one of our main sources of honey, we shall rejoice that this menace to other crops is not destructive to our important sources of honey.

The Price of Sugar—Will it Rise or Fall?

At this writing, Sept. 25, sugar has declined a little; but all experts who are at all familiar with the subject seem to unite in the opinion that sugar is bound to advance on the simple rule of supply and demand. The fact that nearly half of all the sugar produced in the world comes from countries now at war, and that this supply is not now available, will inevitably have an influence on the price of sugar. The price will have to advance; and if it does go up at the present time, honey will likewise take an upward trend.

Feeding when Robbing is Bad

A BEEKEEPER in Northern Michigan desires to feed candy, for he says it is impossible to feed syrup because robbing is so bad. He says, "Throw a section of honey 20 feet high, and the robbers will have it all carried away before it hits the ground." Some robbing! A little later on in the letter he admits that he made the statement a little too emphatic.

Joking aside, there are, of course, a good many times when feeding is hazardous. We have usually prevented any great uproar by using division-board feeders, and we have even used the Boardman entrance feeders considerably. However, we feed late in the afternoon, and work very rapidly; and un-

der conditions when robbing is bad we avoid feeding a part of the colonies in a yard and not the rest. Of course the entrances must not be any larger than necessary. Weak colonies having considerable honey must be carefully looked after.

Our Cover Picture

IN this issue, which, so far as the illustrations are concerned, is almost a special number on the subject of field meetings among beekeepers, it is opportune that our cover picture show a field meeting, not exactly of beekeepers, but of "rural camp boys," from the School of Sydney, Aus., visiting the apiary of Messrs. T. G. Adamson and G. G. Phillips, 282 miles away at Nemingha, N. S. W. The boys with their teachers and friends made up a crowd of 200 in all. The engraving on page 762 shows a few of the boys doing some close inspection work. Although there were so many of them, not one was stung.

This apiary, which Messrs. Adamson & Phillips call their Ngooora apiary, was built up from a start of 30 colonies brought 330 miles six years ago. The total investment has been about \$2500, and nearly \$8500 worth of honey has been produced during the six seasons, which honey has found its way to the London market where it commanded good prices. Mr. G. G. Phillips, who is the apiarist, writes that alfalfa is grown very largely in the locality.

The General Honey Crop this Season with the Exception of that from Clover about the same as Last Year

ATTENTION is called to the Government statistics relating to the yield of honey this season as compared with last year. The fact that the Government figures so nearly agree with the general reports we gave out last year, and this based on independent

sources of information, gives us confidence in their general accuracy. There is one thing that shows out; and that is, with the exception of the production of clover honey, this year will compare favorably with last. The general impression has been that the whole season throughout the country was poorer than last; but this is not correct.

It is no little gratification to know that the Government has taken hold of this work as thoroughly as it has; and we hope that the beekeepers in the future will co-operate more than they have in the past in helping the Government, and that means filling out the Government reports.

Bee Botany at Medina

DURING our spare moments we have been deriving a great deal of pleasure in brushing up on the botany of our old school days. We have been out in the fields not a little with Gray's large work on botany, studying the great varieties of goldenrod, helianthi, and the asters. Asters! my, oh my! If they drove Professor Asa Gray nearly distracted in trying to differentiate the different species, what can you think of the predicament of a poor bee editor who has forgotten almost all he ever knew, and who, after he had "studied up" some of his old books over and over again, found he was in almost as big a maze of confusion as before? Said our local botanist, Dr. C. D. Freeman, one species of aster will seem to merge into another; and it is very difficult, inasmuch as they hybridize, to draw the line, and that is true.

However, the study of this fall bee flora is exceedingly interesting, even if we can't call them all by name, and there is a practical bearing to it, because it means dollars as well as an insight into the wonders of nature.

Most people, when they go into the fields, forests, and swamp lands, see nothing but a mass of weeds and tangled brush. But there is something else there. There are the wonders of creation if one will only keep his eyes open. Ye editor in his "brushing up" on botany is beginning to see some things that he had either forgotten or else had never seen before.

We are reminded of the old days when A. I. Root, in his eager desire to find what the bees were working on, began to get the botany fever. Our older readers will remember that he once had, in those early days, a department called "Bee Botany;" of how eagerly he had sought out and had named every plant that the bees visited. Perhaps it would be worth while to revive

the department; for possibly by so doing our subscribers would be enabled to recognize some old friends which have given them dollars, and some new friends which, if their acquaintance were cultivated by putting the bees near them, would do likewise.

Die Biene und der Breitwabenstock; By Frank Richter, Pottenstein, Vienna, Austria

A FEW months ago GLEANINGS received an autograph copy of the above-mentioned book (*The Bees and the Deep-comb Hive*). The author of the book, Franz Richter, Pottenstein, Vienna, Austria, is a beekeeper who used progressive methods with a most decided leaning toward modern ways of beekeeping as practiced in America at the present time. His book is up to date, and full of interest for any beekeeper. There are over a hundred illustrations, so that even one who does not read German may glean much information from the universal language of the pictures.

Mr. Richter feels that the hive of Langstroth dimensions as commonly used in this country is a trifle too long and also too shallow. His hive, the *breitwabenstock*, therefore, has ten combs that are shorter and also deeper than the ordinary combs as used so extensively in this country. The book, however, is not intended merely for the user of the deep-comb hive, for it is full of valuable information for all who handle bees. It starts with a chapter on the natural history of the bee, with diagrams, etc., then follows a description of the deep-comb hive, various parts illustrated, etc. The rest of the work is taken up with descriptions of various devices, tools, methods of procedure, a discussion of robbing, swarming, increase, disease, etc.

We understand that the book is sold at the low price of 45 cts. Whether it could be secured at this time, on account of the war, is doubtful.

Beekeeping Around the Swamps

BEES are still doing nicely around the swamps. The swamp-milkweed, boneset, blue verbena, and other plants that have been furnishing us honey have now given place to the asters, goldenrods, helianthi, and what appears to be swamp-sunflower. The particular aster, that furnishes the most honey, has a small white flower. We have not positively identified the species, but think it is either *A. vimineus* or *A. tradescanti*, more probably the latter species. It seems to grow everywhere, not on low wet

land, but on side hills and waste lands. The bees are hovering over it in great numbers. The blossom is so small and insignificant, and so destitute of odor, that one can scarcely imagine why it should be so attractive to them; but on leaving a field of these asters, and going up on high ground in the direction of the nearest beeyards, we find that the bees are flying back and forth by the thousands. Examination of the hives shows a light-colored honey; and while, of course, it does not compare with white honey, or that from basswood or other honeys, the flavor is fair; but Mr. Halter says that, unfortunately, the bees will get too much of it sometimes, so that cool weather will come on before the honey is capped over. Then it causes trouble in the form of dysentery. But it makes a very good winter food, he says, when ripened and capped over; and for that reason we shall watch the bees narrowly. If they have any of this uncapped honey, we will take it away, of course.

There is another aster in our locality that somewhat resembles the *A. tradescanti*, except that it is of a blue or purplish blue, with a little larger flower, but a shorter plant. The bees work on it almost as freely as on the other. As nearly as we can identify it, it is *A. laevis*.

Another plant that the bees are working on may be one of the helianthi. It may be swamp sunflower (sneezeweed), *Helenium autumnale*. In our last issue we reported that it was the Jerusalem artichoke; but further examination shows that it cannot be that, as it has no tubers in the root, and, moreover, the heads are different. We have not positively identified the species as yet. The bees are working on it very profusely, and it appears to be one of the important sources of nectar.

There is a great variety of other flowers still to come on that our bees at the swamp will be getting honey from until the next hard frost. It should be noted in this connection that light frosts do not do any harm to the asters and helianthi. They seem to be proof against ordinary cold. It is also somewhat remarkable that these plants will secrete nectar when the mercury is as low down as 50 Fahrenheit—so cold, indeed, that the bees toward night are often left in the field to return next morning if it warms up enough. These fall blossoms seem to depart from the rule of summer flora that require a warm and muggy atmosphere before they yield nectar. While the bees do not work on them so heavily when the weather is so cool or cold, they nevertheless gather nectar. "Some of the bees were so

cold during that last cold spell," said Mr. Halter, "that they would be too chilled to get into their hives. Hundreds and almost thousands would be lying all over the ground." He was inclined to think they would be lost; but we assured him that, as soon as the first warm sunshine came out, they would go back to their hives. But, nevertheless, such cold weather must be a strain on the bees, and we therefore assume that a large amount of nectar must be yielded or the bees would not brave such cold. Examination of some of the hives showed that a few had brood on the outer edges chilled.

As we went over the waste land in the vicinity of Hudson we found that recent frosts had killed down all the heartsease; but the asters and helianthi were as bright and smiling as ever, welcoming the kisses of the bees that were everywhere present.

BEES FLY FURTHER FOR SWAMP PASTURAGE THAN FOR ORDINARY CLOVER PASTURAGE.

The reason of this is obvious. When clover is in bloom it is so abundant that the bees can usually get all they can take care of, within a range of a mile or even half a mile. In our locality bees seldom fly further than one and a half miles at most in clover times; but at the Hudson swamp we found our bees on some of these little asters that had evidently come $3\frac{1}{2}$ miles, because we readily recognized our own leather-colored Italians, the nearest yard of which was that far away. It is evident that bees in the fall, when short of pasturage, make long excursions. These excursions become more and more extended until pasturage is found. When the first bees find it, they are not slow in communicating the good news to the rest.

These swamps about Hudson look so good to us that we are securing locations at several points. The papers at Akron had it that we were going to "buy up the whole thousand acres" of swamp land; but we would hardly do this even if we could. If it could ever be drained it doubtless would be converted into one vast truck garden; but we understand that this is not practicable and probably will never be done.

Honey-crop Report from the United States Department of Agriculture

ON pages 6 and 7 of the General Review of Crop Conditions for September 1, 1914, in Farmers' Bulletin No. 620, a general report is given of the honey crop for 1914. Preceding the table of results is a summary, agreeing closely with the reports that have appeared in GLEANINGS.

In the first place it will be noted that, according to this table, there is a marked decrease in this year's crop of clover honey in the North Central States, where clover is mainly produced, compared with that of last year. With some slight variations the alfalfa crop in the West is about the same as in 1913. With the exception of the shortage in clover, the yield of alfalfa and other honeys is about the same as a year ago.

The data in our own office support the Government's figures, and we therefore assume that they are correct.

The decreasing percentage of comb or bulk comb honey, in comparison with extracted honey, is commented upon. There are probably two reasons for this: First, in many markets not enough more can be secured for comb honey than for extracted to pay for the difference in the total amounts of each that can be produced from a given number of colonies; second, the greater difficulty presented in shipping comb honey as

compared with shipping extracted honey. This latter does not have reference to bulk comb honey, but to comb honey in sections. Much of the difficulty here is due to carelessness in grading and packing on the part of the producers themselves. Breakages in shipments of comb honey from small producers are so frequent that honey-dealers and commission merchants often refuse to continue to handle comb honey.

There is, perhaps, a third reason which ought to be mentioned, and which includes bulk comb honey, and that is, that comb honey, when it granulates, as it often will if not sold within six months, commands a much smaller price. So far there is no practicable way of liquefying comb honey without reducing it to a liquid honey and wax.

Taking it all in all, the report is exceedingly valuable, and we note with pleasure that our general Government is taking hold of this work and doing it so well.

TABLE 8.—HONEY—YIELD PER COLONY AND PROPORTION OF CROP IN COMB, EXTRACT, AND CHUNK, 1914, WITH COMPARISONS.

State.	Yield per colony.		Form of honey produced.					
			Proportions in 1914.			Proportions in 1909.		
	1914	1913	Comb.	Extract.	Chunk.	Comb.	Extract.	Chunk.
	Lbs.	Lbs.						
Maine	45	38	80	15	5	80	20	0
New Hampshire	27	27	..	..	..	..	..	..
Vermont	39	33	65.9	28.1	6	70	28.8	1.2
Massachusetts	25	31	66.9	32.4	0.7	86	12	2
Rhode Island	40	45	5	95	0	10	90	0
Connecticut	28	35	48	47	5	58	33	9
New York	20	37	47	50	3	60	38	2
New Jersey	10	40	25	75	0	65	35	0
Pennsylvania	35	45	65	29	6	74	21	5
Delaware	15	21	..	..	..	..	..	..
Maryland	30	40	69	22	9	90	10	0
Virginia	30	38	87	12	1	93	7	0
West Virginia	25	20	57	38	5	..	..	..
North Carolina	35	25	45	30	25	42	21	36
South Carolina	25	25	..	..	..	..	..	..
Georgia	30	30	28	33	39	54	15	31
Florida	42	50	11	88	1	15	84	1
Ohio	17	50	66	32	2	68	29	3
Indiana	14	60	52	36	12	62	25	13
Illinois	12	60	42	56	2	53	46	1
Michigan	37	50	56	43	1	69	30	1
Wisconsin	45	60	41	58	1	28	71	1
Minnesota	35	60	36	63	1	52	48	0
Iowa	20	65	56	42	2	65	34	1
Missouri	5	30	32	38	50	41	35	24
North Dakota .....	..	..	..	..	..	..	..	..
South Dakota	20	50	77	22	1	65	30	5
Nebraska	30	50	43	42	15	61	38	1
Kansas	25	25	67	28	5	78	19	3
Kentucky	8	40	49	33	18	50	27	23
Tennessee	30	30	31	23	16	26	19	55
Alabama	32	35	34	41	25	39	32	29
Mississippi	31	35	49	26	25	43	27	30
Louisiana	40	35	0	100	0	..	..	..
Texas	55	35	4	51	45	1	40	59
Oklahoma	25	35	36	17	47	40	15	45
Arkansas	15	30	25	15	60	15	5	80
Montana	30	35	..	..	..	..	..	..
Wyoming	75	75	92	8	0	5	95	0
Colorado	40	60	67	30	3	70	28	2
New Mexico	85	50	31	61	8	37	61	2
Arizona	63	70	6	94	0	10	90	0
Utah	65	70	17	83	0	0	100	0
Nevada	50	75	..	..	..	..	..	..
Idaho	50	55	47	51	2	67	30	3
Washington	55	45	46	54	0	59	41	0
Oregon	45	40	64	34	2	53	38	4
California	75	36	18	79	3	20	79	1
United States	31.6	40.6	41.7	42.1	16.2	46.5	34.9	18.6

Dr. C. C. Miller

STRAY STRAWS

Marengo, Ill.

THE season was remarkably wet, and then it turned around and burned the pastures brown till a good rain came Aug. 16. [That has been the trouble in most localities; and the parching hot weather has been the main reason why the crop of clover honey in the country was cut short. In the whole northern portions of the country, where the season was two or three weeks later, the rains came soon enough to save the crop.—ED.]

SPEAKING of European foul brood, Mr. Editor, you ask, p. 619, "If you had used only vigorous Italian blood instead of part hybrid, would you not have been entirely free from the disease by this time?" Hardly. I have had just five cases this year (mild). Two were three-banders and three hybrids. Previous years Italians were also affected. Yet I wish I had only Italians, and advise them for those fearing European foul brood. Please remember, too, that the disease surrounds me.

I'M SORRY I couldn't report my 1913 crop in pounds. Not knowing the weight, I gave the number of sections per colony. The result has been that in a number of cases (as in last GLEANINGS, p. 661), it has been stated that I got 266 *pounds* per colony—a regrettable exaggeration. I don't believe it was more than 245 pounds, and possibly not more than 235. [We should put even the figures, of 235 pounds, as a record-breaking job—pretty good for a young old man 83 years old like you.—ED.]

REFERRING to that matter of foul-brood colonies absconding during treatment, I may say that I didn't have absconding after I began giving a section of honey to the colony left in the empty hive. [The one serious difficulty with the standard orthodox treatment of foul brood, either European or American, is the tendency of bees to swarm out after being hived on frames of foundation. If a section of honey will overcome the trouble it will mean much. But we should suppose that such section, after the bees get started on foundation, should be burned or melted up, and the honey brought to a temperature of boiling for twenty minutes, as recommended by Dr. Phillips.—ED.]

J. E. HAND, glad of your company on that sugar-feeding business, p. 671. It is possible that Editor Root may be correct that evaporation and inversion of sugar syrup may be no harder on bees than in the case of nectar, and he is correct in saying that thousands of colonies are successfully

wintered on sugar syrup. But that doesn't end the matter. Two colonies, side by side, may to all appearances winter equally well, one on honey the other on syrup, but there may be a notable difference in the vitality of the bees. Those fed on honey have *all* the elements needed for full vitality, some of which are entirely lacking in sugar; and, although these latter are minute in quantity, they are so important that, without them, there will be a lack of vigor. I don't think it would take many kegs of nails to supply all the iron I need; but I believe I should suffer in health seriously if all iron were denied me—same with bees. I have a suspicion that the honey-fed bees may be of such greater vigor that their successors shall do enough more on the harvest to pay for a difference of 5 cents a pound—possibly 10 cents—between honey and sugar. Moreover, I believe, on the same ground, that if three-fourths or more of the sugar used by this nation were replaced by honey we should be a more vigorous people. [You may be right; but we feel quite sure you have overestimated the relative difference in values. Even 5 cts. per lb. is a big difference. Is it not a fact that sugar-fed colonies produce big crops the following season? Chemically speaking, sugar syrup, if properly inverted, is very nearly the same as honey. Sugar syrup and nectar in the first place are both cane sugars or sucrose. At the same density the bees will invert either; that is to say they will make a sort of honey of both. But a great deal of sugar syrup fed in the hives is only partially inverted, because it is fed too late or too thick. But we have noticed time and time again that the late feeding of thick sugar syrup has brought out colonies in the spring that were the best we had in the apiary. A strong, vigorous colony in the spring, no matter how it was fed, ought to get more honey when the harvest comes on than a weak colony fed on honey during the winter. No, sir, doctor, we feel sure that you are greatly overestimating the difference, if difference there is. Then, what element is there in honey that the bees need that is not found in good pollen and sugar syrup? When natural pollen comes on in the spring the bees will probably get all the elements they need.]

This is a profitable subject for discussion, and it is an important one. If Dr. Miller is right in his belief that honey is 5 cts. per lb. better as a winter food, then we ought to know it.—ED.]

J. L. Byer,

NOTES FROM CANADA

Mt. Joy, Ont.

Page 571, Aug. 1, the claim is made that boneset honey is bitter and will spoil buckwheat honey for table use. Is this an established fact? If so, it surely must be a matter of "locality." I know of a few sections in Ontario where this plant grows in abundance around marshy places; and while these same localities produce lots of buckwheat honey I have never yet noticed this bitter taste, even if the bees worked freely on the boneset at the time buckwheat was yielding.

* * *

I am surprised that Mr. Chadwick made that comparison on page 328, May 1, as to the feeding of hogs and bees. Please remember, friend C., that, if you gave a pen of hogs all the feed they would need for more than one meal, they would waste or foul all they did not use at once. No matter how much you feed the bees in the fall at once, you can give no evidence to prove that any of them ever make "hogs" of themselves. I often like to differ with A. C. Miller; but on this question of feeding he is "sound as a dollar" on general principles, even if he did advise a bit of *overdose*, perhaps, in a late issue of GLEANINGS.

* * *

Just a word of explanation regarding Mr. Holtermann's suggestion, p. 688, Sept. 1, that I am not doing my son justice when I claim to "rough it alone mostly" in so far as the summer work in the apiaries is concerned. My son is a faithful lad, and deserves all credit for the work he does; but he has never spent a season in the yard with me yet. When 16 he left school, and in the summer looked after the yard I bought 200 miles from home. The next year he was there also, and during the busy time of the last two seasons he has been at the Lovering yard, 190 miles north. My wife helps only with the extracting, sometimes giving me a lift for a day or two during queen-clipping in fruit-bloom. So, after all, my statement as to "roughing it alone" is correct in so far as the swarming is concerned; but there is no boast implied in the statement, for many might think the "roughing" was overdone. I am quite willing to let my friend lift off supers of every colony every week or oftener if he wishes; but I frankly confess that, if I had to do that work alone, I would go out of the business, for it simply would be a physical impossibility. My losses from swarms are extremely light—many seasons practically nothing, so I see no reason for trying to kill myself

with work when there is no profit in it after all.

* * *

On page 657, Sept. 1, the editor states that the smoke method of introduction is proving uncertain in many cases. Personally I have lost two queens when using this method; and, judging by the editor's remarks, I guess I oversmoked the colony, as it was a very vicious one. After killing two queens, one was given in a cage with candy for the bees to eat out, and in this case they accepted her. Generally speaking, there is no plan but will fail once in a while under certain conditions, and it is a question of choosing the simplest plan that will give best uniform results. Said plan may prove all right for me, but not for the other fellow. The moral is that, when you strike a plan that gives you splendid success, stick to it, or at least go slow in adopting another plan that gives you splendid success, stick but which may prove to be a poor substitute in your own case.

Another matter that is mighty uncertain with many is the making of candy for bee-feed. F. J. Lee, page 657, Sept. 1, tells of his troubles in that line, and I happen to know that many others have been just as unfortunate. In fact, one lot I made myself acted just as his did—ran all down among the frames, and did more harm than good to the bees. Some candy I made was inclined to be granular when finished; and, although the bees worked it all right, yet there was considerable waste. To the other lot I added more honey, and the finished product was hard and glossy; but, as already stated, when placed over frames it melted enough to run down among the frames. I am inclined to think with some other correspondents that a course in candy-making is essential before one can be really sure of getting a right article for the bees.

* * *

Heat and moisture—surely a wonderful combination to change the looks of the country after a prolonged drouth lasting the greater part of the summer. About August 10 bountiful rains fell, accompanied with warm weather, lasting for two weeks. As a result, prospects for next year are greatly improved, as wherever there was a bit of clover that has survived the drouth, a splendid growth came on at once. While there will not be very much alike for next season in our locality, owing to so many fields being killed outright, yet we have a

Continued on next page.

BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado.

THE HONEY CROP

The honey crop in Colorado this year came in spots, some localities having a full crop and others a total failure so far as surplus is concerned. I have not heard of any very extended district where feeding will be necessary. The crop in the Grand Valley from Glenwood Springs to Fruita is reported very poor. In Mesa County the crop will probably not average ten pounds to the hive. Parts of northern Colorado, the Arkansas Valley, and the southwestern part of Colorado had fair crops, while the western-slope counties of Montrose, Delta, Mesa, and Garfield had very light yields. Prices on comb honey tend to rise, and all the comb honey for shipment will have been moved earlier than last year, and for at least ten per cent more than was realized a year ago. The extracted-honey market is very quiet as yet; but if sugar stays around \$10 a sack it will not be hard to dispose of our extracted honey right at home.

* * *

MORE INFORMATION ON SWEET CLOVER NEEDED.

Quite a lot of sweet-clover seed put on the market is thrashed out in the wheat and oats, and is gathered up along with other trash, weed seeds, etc., after the thrashing is done. So much of this seed is unripe or blasted, and so mixed with weed seed, that it should hardly be put on the market. But with the demand there is for sweet-clover seed, it will get on the market. Every farmer who contemplates sowing sweet clover should find out how to test seed or examine it with a microscope before purchase. The United States Department of Agriculture had some enlarged photographs of alfalfa, sweet clover, and weed seeds on exhibition at the land show in Chicago last year, which were very fine. One could soon learn to distinguish the different seeds. If these illustrations could be placed before all prospective purchasers of sweet-clover seed it would aid them a great deal.

The Government bulletin on sweet clover should be in the hands of every person who wants to sow the seed.

Some seedsmen have said that sweet-clover seed should always be sold in the hull in order that there need be no danger of getting alfalfa and sweet-clover seed mixed. To the casual observer the seed does look similar when hulled. However, the odor of hulled sweet-clover seed is unmistakable, and there need be no selling of alfalfa seed

for sweet clover or *vice versa*, if the odor is known.

One other point should be emphasized, and that is, the slow germination of the seed. A thirty-day test of seed may bring out but a very small per cent of germination. If all the seed that is good would germinate promptly, but three to five pounds of hulled seed would be sufficient for an acre.

Doubtless many will be carried away with the sweet-clover-seed agitation, and will sow the seed when they have no very great need of it; others will have indifferent results; but in the long run we may expect sweet clover to be with us as red clover and alfalfa now are.

Notes from Canada. Continued from page 750

few fine fields since the rain, and quite a lot of white clover has shown up also since the change in weather conditions.

Buckwheat fields were plentiful with us; but the yield of honey is very light. The first two weeks of August, which is always the best time for buckwheat honey with us, were very cool and dry, and then the next two weeks were very wet—that explains matters. We shall do well if we have enough buckwheat honey to pay for feeding the colonies that are light in the brood-nests; and many localities that I know of have not even that much. Thanks to a late flow from willowherb, etc., bees are in much better condition at the north yard, as the brood-nests are heavy, while in addition the bees there stored a nice little surplus.

Owing to the high price of sugar and the difficulty of getting it at any price, many have written me as to the advisability of feeding the little dark honey they have in lieu of granulated sugar. In many sections of Ontario what little honey has been stored is mixed with honey-dew, and I would not feed such stuff under any conditions. If the buckwheat honey is in such shape that it has to be extracted, then I would prefer to feed sugar syrup instead of the honey, even if I paid as much per pound for the sugar as I could get for buckwheat honey. If the latter is in good sealed worker combs, then I would lower such combs into brood-nests instead of extracting the honey and feeding it back, or of selling the honey and buying sugar. In feeding extracted honey, at least one-third as much water should be added, and the mixture brought to a boil before feeding.

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

A recent trip from San Francisco down the San Joaquin Valley gave me an insight to that vast fertile region where the bee business will increase faster, perhaps, than in any other part of the State within the next few years.

* * *

The editor thinks it may be better to recommend the old cage-introducing method instead of smoke "for a while yet." That is the conclusion I came to last autumn after I had lost some fine queens for which I had paid out the cold cash. This year I had better success with the smoke method, but am not yet ready to pronounce it infallible.

* * *

Indications are that nearly all colonies in this part of the State will go into winter in excellent condition. The main object now should be to leave plenty of stores to allow the bees to breed up quickly in the spring, for the probabilities are that the spring flow will be short and sweet; at least that is usually the case following a good season.

* * *

The picture on pages 634-635, is worth a year's subscription to any lover of pictures, and especially to those who are lovers of both pictures and bees. If there is any one thing I am a lover of it is pictures; and a magazine with plenty of illustrations is far ahead of a plain copy. Take the *National Geographic Magazine* with its pages rich with the finest of pictures, and you have one that is hard to beat.

* * *

Sugar advanced 100 per cent in one week; flour advanced the same week, while wheat declined. Pastries sweetened with honey advanced according to the advance in sugar, but honey is merely holding its own in price, with the danger that the game of slaughter across the Atlantic may cause a temporary decline. Why should not honey advance as well as sugar, when honey is used to sweeten much of our pastry?

* * *

The following quotation from Mr. A. F. Wagner, of Imperial Co., appealed to me as being of especially sound sense. "One word more, and this for inspectors: Don't put too much dependence on your judgment as to whose yards should be inspected and whose not. You may be mistaken. Foul brood is inside of the hives, and you will find it where least expected." Mr. Wagner

is right. Every colony in the county should be inspected, regardless of its owner's standing, and this is the only way we can hope to eradicate disease.

* * *

The beekeepers of Minnesota, Wisconsin, and Iowa have organized a co-operative association. Unless the beekeepers there are different from those in California, the organization will not last long, *unless* they stand by the association. The farming class are very hard to keep together in a mutual co-operative business. I know this by past experience, in that one time I was a member of an organization of potato-growers in the Kansas River Valley. Things went along very nicely for awhile; but a few growers came to the opinion that they knew more than the heads of the association, and they actually sold for more than the association could secure for them, which was, after all, only a plan of the buyers to disrupt the organization. It worked, too, and the growers were soon at the mercy of the dealers as before. The mere fact that a beekeepers' organization concludes to handle its own production should not be a sign that they are expected to "bull" the market to the limit, but more a sign that they are concentrating the marketable output of the producers at a point where the buyer can secure quickly and easily what is needed for his trade at a fair price, and yet have the producers all receive a fair price.

Another thing that an organization should keep in mind is the guaranteeing of the cleanliness of their product. I dislike to say revolting things about beekeepers; but it is a fact that there are some of the sloppiest, dirtiest, most unclean methods used in some of our California apiaries—not as a rule, but it crops out here and there over our domain. A woman's kitchen can often (and generally) be judged by the tidiness of her kitchen dress, and it is largely so with the appearance of our beekeepers. Think of taking a big spoon to scrape the larvae off the strainer so the honey can get through! or an open tank standing under the extracting-house with holes in the floor large enough for beans to drop through! Well, both of those conditions have been noted in the past, and I dare say they are still to be found. This is not a very good advertisement for California honey, but such men do not deserve to sell their produce at any price.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.

"A recent writer recommends allowing bees as little as from six to ten pounds of stores for winter. Another writer, in a different agricultural paper, gave fifty pounds as the required amount. This is very confusing, especially to the beginner. How much food does each colony of bees require in order to winter successfully?

Well, these things are often very confusing to the beginner, and I do not wonder at it. However, as a rule the writer of an article in any of our periodicals cannot go into all of the minutiae connected with the subject written upon, because it would make too long an article. That none need be thus confused, my advice to all beginners is to purchase one or more of our valuable books on bee culture; in these they will find most if not all they want to know.

While I do not think that fifty pounds of honey should be required to winter a colony of bees under any condition, yet the amount required depends very largely on the location, whether the bees are wintered in the cellar or on the summer stand and upon what is meant by "winter." It should be plain to all that more stores are required where the winter lasts from October 20 to the middle of April, as it does sometimes here in our northern localities, than in a latitude like that of southern Ohio, or in some sheltered nook where the mercury rarely if ever touches the zero mark. I presume that the writer who gave from six to ten pounds of honey as a right amount for stores had in mind the "fuel" required to keep the colony warm but not to supply them food for brood-rearing in the spring. He probably argued that this scanty supply of food tends to make the bees retrench, so that they use this supply only as fuel, and thus early brood-rearing, which is supposed by many to be of no advantage in cellar wintering, is done away with. According to his theory he winters the bees at little cost, and at the same time places them in a condition which is most conducive to their prosperity, where spring bloom furnishes a supply of nectar as soon as the colonies are placed on their summer stands. I cannot think that any writer would give so little an amount in the fall as sufficient to last the bees till honey comes from the fruit bloom the latter part of May. Most of those who advocate a small amount of stores provide themselves with a supply of frames full of sealed honey, reserved to fall back upon when the supply given in the fall is about to become exhausted.

The one thing which I see against this short-store plan as given by its advocates is that, in our locality, the bees might run out of stores at a time when it would be impossible to supply their wants on account of protracted cold after the bees are out of the cellar for the season, thus increasing the probability of loss. I well remember when I once lost two good colonies by starvation during a cold two weeks the fore part of May.

Years ago, when I first began to keep bees, I thought that each colony wintered on the summer stand should have at least 30 pounds of honey to carry them to the first of May; but after repeated trials I am fully satisfied that 25 pounds is just as good as 30; and I find that not one colony in 25 will consume 20 pounds during this time. The only reason for giving the 25 pounds instead of the 20 lies in the simple fact that the bees will retrench when their stores are getting low; and if this retrenching comes when the bees ought to be rearing brood, then we are losing largely by not having honey enough in the hive to keep brood-rearing going as it should. I think it is well in this locality if all colonies on the summer stands should have at least ten pounds of honey in their hives the middle of April, to give the bees the confidence they need to start out right for the season; for with this amount of stores they will not feel the need of retrenching unless the season is one of unprecedented cold, but will push brood-rearing rapidly. If they can be wintered on 6 pounds up to this time, so much the better: but if at this time they do not have plenty of honey it should be supplied to them in some shape.

For cellar wintering I allow 5 pounds less honey than for outdoor wintering, finding that, as a rule, less than 2 pounds of stores per month is the average amount consumed by the bees while in the cellar. Then a good deal depends on the strength of the colonies. A very late swarm with only a quart or two of bees will not consume as much stores as will a powerful colony with four times as many bees, although the consumption of the smaller colonies will be greater in proportion to their numbers. I have carried through small colonies, or what would be more properly termed nuclei, from October to May on 5 pounds of honey, but these reared very little brood. The amount of brood reared has very much to do with the consumption of stores.

GENERAL CORRESPONDENCE

A BRIEF REPORT OF SOME OF THE SUMMER MEETINGS CONDUCTED BY THE IOWA BEEKEEPERS' ASSOCIATION

BY FRANK C. PELLETT

THE COLO FIELD DAY

Fred Hall and wife were hosts to the Iowa beekeepers on June 10. Coming at a very busy season the attendance was not as large as was expected. However, those in attendance enjoyed a very pleasant day, and many expressed themselves as largely repaid for coming. The register showed sixty names of persons present, some of whom came for more than one hundred miles to see the Hall apiary and spend the day visiting brother beekeepers.

The Halls spared no pains to make the day a pleasant one for every visitor, and

speaker of the day, and gave a very interesting address on the subject, "Value of Scientific Research to the Beekeeper." Mr. Bartholomew discussed some of the problems yet to be solved, and outlined some of the things that the individual was hardly in position to undertake, but which can be carried out by such an institution as that with which he is connected. Mr. Bartholomew is especially well equipped for scientific work, and we are expecting great things for the Iowa beekeepers as a result of his work at the college. Many subjects were discussed informally during the day, and some

expressed their determination to attend as many more of the summer meetings as possible.

IOWA FIELD MEET AT DELMAR

The field meet at the Coverdale farm on July 7 was the fourth in the series of summer meetings. About seventy-five were in attendance, some of whom came long distances. Among the visitors from outside the State may be mentioned C. P. Dadant, of Hamilton, Ill., and L. A. Syverud, of Canton, South Dakota. Delmar is not very accessible to the bee-

keepers of Iowa; but the Coverdale farm is of unusual interest, and those present felt well repaid for the effort necessary to reach the place. About 150 acres are at present in sweet clover on the Coverdale farm, and sweet clover was the principal subject of discussion. There are about 300 colonies in the apiary which is kept at home. Formerly Mr. Coverdale looked after a series of outyards; but by increasing his acreage of sweet clover he soon found it possible to keep as many colonies in his home yard as he could well care for in connection with his other large interests.



A jolly after-dinner group at the Colo, Iowa, field day, June 10.

many were the expressions of pleasure from those present. It is Mr. Hall's custom to remove the queens from all colonies soon after the beginning of the honey-flow; and as he has a specially fine strain, the result of about thirty years selection and breeding by D. E. Lhommedieu, from whom his apiaries were purchased, many were desirous of obtaining some of his choice stock. Mr. Hall very generously gave those present as many as they desired, with the result that the home yard was entirely dequeened during the day.

Prof. Bartholomew, of Ames, was the



Some of the "big guns" at the Delmar meeting at the Coverdale apiary, July 7, 1914. Frank Coverdale, Prof. E. C. Bartholomew, C. P. Dadant, and Secretary S. W. Snyder.

Being extensively engaged in raising cattle and hogs, as well as hay and grain, one wonders how they find it possible to care for as many bees as they do. For seventeen years sweet clover has been raised in constantly increasing areas until it is now the principal crop on the 400-acre farm, and everything else is planned with a view to utilizing this crop to the best possible advantage. The ladies of the household spread a bountiful repast for those from a distance. There were the usual talks and discussions, although these were cut short by a rain in the afternoon. Altogether the occasion was a very pleasant one which will be long remembered by those present.

THE CLARINDA MEETING

The seventh of the Iowa meetings, held at the Strong apiary on Aug. 12, was not as largely attended as some of the others, but the interest was equal to any of them. Mr. E. J. Baxter, and M. E. Darby, State Inspector of Missouri, came from the greatest distances. Mr. Baxter and Mr. Darby both spoke on matters of interest to the beemen.

There were nearly as many in attendance from Missouri as from Iowa. Much time was spent in looking over Mr. Strong's apiary and in informal discussion. Nearly every person present was interested in beekeeping, the merely curious not being in evidence.

Atlantic, Iowa.

Field Day and Picnic at Des Moines

BY F. C. SCRANTON

About 100 people gathered at the Dustman apiary on the Colfax interurban near Des Moines on July 15. A nice social time

was had during the morning, and at noon the tables were spread with good things from the generous supply of baskets.

In the afternoon the meeting was called to order by Pres. Schweer, of the Polk Co. Beekeepers' Association, and Rev. Mr. Grantham pronounced the invocation. This was followed by a talk on good fellowship by Judge A. P. Chamberlain. Prof. C. H. Tye, of Drake University, spoke on "Bees as an Economic Friend of Man." Prof. Tye showed in a very concise manner scientific proof of the value of bees as fertilizers.



The Clarinda meeting, Aug. 12.



The Delmar meeting, July 7.

This was followed by an explanation of the purposes of the organization by Pres. Schweer, of Valley Junction. Prof. C. E. Bartholomew, in charge of apicultural work at the State University, spoke on scientific beekeeping, and impressed upon his audience very clearly the application of Mendel's law in the improvement of bees. F. C. Pellett, State Bee Inspector, talked on "Diseases of Bees." Hamlin B. Miller, proprietor of a printing business in Marshalltown, and a man who is getting fun, health, and profit from his bees, spoke upon applying business principles to the production and sale of honey. R. H. Longworth, a specialty farmer of Polk City, gave a talk on various uses to which honey can be put.

In addition to the above program, B. A. Brown, who last year cleared about \$1100 from his apiary on a city lot, dissected a hive of bees and gave the frames of brood and bees to a number of people in the audience, children included, and had their pictures taken. Mr. Brown runs his bees merely as a side line, his principal business being that of an accountant. F. C. Scranton, of Des Moines,

gave a demonstration of extracting honey.

Beekeepers came from a distance, and all considered themselves very fortunate in being able to attend.

Des Moines, Iowa, July 17.

Report of the Meeting at Mt. Pleasant, July 28

BY J. W. STINE

The opening prayer for the devotional was offered by Professor Liest, of the Iowa Wesleyan College. The scripture lesson was

taken from I. and II. Peter, in which a swarm of bees without stings is mentioned. Mr. Mills, the mayor of the city, then gave an address of welcome which was greatly appreciated.

Owing to the fact that nearly all our beekeepers' thrashing was in full swing in nearly every community, not nearly as many people were present as was anticipated. Nearly all the subjects were duly discussed with much profit to all present. Nearly every one who had subjects assigned was present. The picnic dinner at noon was greatly enjoyed by every one.



Meeting of bee congress, September, 1907, at Taquary, Brazil. First session of the "Syndicato Apicola Riograndense." "This syndicate is still in existence, and has lately held its sixth congress in Hamberger Berg."—EMIL SCHENK, Taquary, Brazil.

It was voted to make our next summer meeting a tri-state meet with Illinois, Missouri, and Iowa, holding it at Hamilton, the home of the *American Bee Journal*. The Dadants assure us a hearty welcome in coming to Hamilton.

Mr. Moore, of Illinois, Mr. Holekamp, of Missouri, and J. W. Stine, of Iowa, were appointed a committee to make arrangements for this meeting.

Some new members were taken into the Iowa State Beekeepers' Association, and

all eyes are turned toward Ames, where our next annual State convention is to be held

the latter part of November. Salem, Iowa.



A practical conference of traveling apicultural teachers in Brazil.—Photographed by Emil Schenk, Taquary, Brazil.

FIFTH ANNUAL FIELD DAY OF THE CONNECTICUT BEEKEEPERS' ASSOCIATION

BY L. WAYNE ADAMS

The fifth annual field day of the Connecticut Beekeepers' Association Oct. 1 was the largest in attendance in the history of the organization. More than 125 enthusiastic beekeepers from all corners of the State gathered at the apiary of T. L. Pratt, in the ancient and historic town of Wethersfield, made famous by its Webb house, at which Gen. George Washington stopped for several days, and in which was planned the Revolutionary campaign resulting in the capture of Cornwallis at Yorktown and the termination of the war.

Lack of time prevented the beekeepers from visiting this ancient shrine, but through the courtesy of Warden Garner they were permitted a visit through the Connecticut State prison, and 121 people availed themselves of the privilege.

Mr. Pratt proved himself a royal host, and spared no pains to make the event pleasant to all. His house was elaborately decorated in gala attire, displaying freely the national colors.

The morning resolved itself into an informal gathering, inspection of the neatly arranged apiary and equipment, comparing notes, renewing and forming new acquaintances, and the enrollment of fifteen new members.

At noon, beneath the shady trees and amid the musical hum of the bees, the mem-

bers partook of a basket lunch while the host dispensed coffee, bananas, and sandwiches.

The afternoon program took the form of a "round-table" talk upon the following subjects:

"Putting on and taking off sections."

"Kinks of the swarming season."

"Watching for foul brood."

These questions were freely discussed by Pres. Bunnell, Inspector Yates, Messrs. Root, Vanderverken, and others who imparted many valuable suggestions.

Arthur C. Miller, of Providence, who was detained by illness, prepared and sent a paper which was read, entitled "Why Beekeeping should be taught in the Agricultural College," advancing many forceful and logical reasons in favor of such a project.

It should be mentioned that the Connecticut Beekeepers' Association has striven for some time to have an apiary installed at the Connecticut Agricultural College, and it looks now as if its labors would bear fruit, as President Beach, of the college, has given his consent.

At the close of the afternoon's program the members assembled for a photograph, and promptly at 3:15 formed in column of twos, and, marshaled by Major Wm. C. Steele, a veteran of the civil war as well as beekeeping, proceeded to the prison, where



Monroe County (New York) fielding meeting held at the apiary of D. W. Trescott, Conesus, N. Y., June 20.

the major placed the Connecticut Beekeepers' Association behind the bars. It is needless to say that none remained after they had been courteously shown through the institution.

This ended the day's program, and the members departed for home pronouncing

this field day one of the banner events in the 23 years' existence of the organization.

The day was all that could be desired by way of temperature and sunshine, and it was evident from the pleased countenances that all had enjoyed a royal good time.

Hartford, Ct.

THE TWO FIELD DAYS IN MEDINA IN JULY

BY E. R. ROOT

On p. 766 is a picture of the beekeepers who met at Medina at the time of the field days of the Ohio State Beekeepers' Association, July 9 and 10. This picture was taken in the forenoon of the second day, and represents something over a hundred people. On the evening of the first day there were present at the evening address something like 500 people, many of whom were Medina citizens who had come to hear A. I. Root's experience in the early days when he had many ups and downs—more downs than ups. A copy of this address has been running in *GLEANINGS*, in the August issues. After this picture was taken on the second day, the whole number were driven in automobiles to several of our outyards, finally landing at the basswood yard, where 3500 queens are reared annually under the management of Mr. Mel Pritchard.

It is possible to identify only a few persons in this group from all the rest. In the bottom at left is Pres. W. A. Matheny. On his right is Mr. L. W. Boyden, who married A. I. Root's youngest daughter. The next is E. R. Root, and the next to him is Mr. M. D. Tyler, of Seville. Mr. J. H. Donahy, the celebrated cartoonist of the *Cleveland Plain Dealer*, is in the center; and with him on his left is A. I. Root. Back of E. R. Root's left is Mr. Moore, the largest honey-producer in the State, unless it be Mr. Fowls. At the left of A. I. Root is A. I. Root second, the boy standing on his knee. Mr. Chalou Fowls, the honey-bottler, and one of the largest producers, of Oberlin, appears third from the right in the second row. In the back row, fifth from the end, is Mr. Morris, one of the State foul-brood inspectors. In the second row, on



Field day of the traveling salesmen of the Wm. Edwards Co., wholesale grocers, at the home apiary of the A. I. Root Co., Medina, July 11.

the left, first man, is Mr. A. J. Halter, the man who is managing our bees in the Hudson swamps. There were other celebrities in this crowd, but it is practically impossible to point them out on account of their position; for example, Prof. Hines, of the State University, Columbus, Prof. N. E. Shaw, entomologist and State foul-brood inspector, and last, but by no means least, Jay Smith of Vincennes, Ind., who is sometimes called "The Jay."

On July 11 we had a second field day, consisting of the traveling men of the wholesale grocery firm, the W. Edwards Co., of Cleveland. They came down here in automobiles, 65 strong. As most of them had had very little practical experience they formed a circular inclosure, in the center of which our bee men gave live-bee demonstrations. In the small picture, above, is seen State Inspector Morris and our foreman, Mr. Marchant. These two men greatly amused the crowd by pouring pecks of live bees over each other's bare backs, together with other stunts of a like nature. Your humble servant stands a little at the right, with left hand extended. He is just in the act of signaling to the moving-picture man, who came here at the instance of the Department of Agriculture, Columbus, to catch the field-day operations of the State Beekeepers' Association; but as he arrived

too late the operator was put at work on the field day July 11 for the benefit of the wholesale grocers.

I was in the act, when the picture was taken, of signaling to the moving-picture man to start his machine going, for the "fun" was about to begin. And it did. This field day was just at the close of our basswood flow, and the boys said the bees were a little "ornery." They took advantage of the bare backs of the men, and began to sting, greatly to the amusement of the traveling salesmen; but, nothing daunted, they kept right on. In the mean time, some of these peppered E. R. in the face and ears; but he had to "stand and take it," because, you know, it would never do to finch while the moving-picture man was taking in the scene. This film, I understand, will be shown at the Panama Exposition in California next summer, in one of the Ohio exhibits; but our subscribers are privileged to have a preliminary snapshot of the thing just as it was about to be pulled off.

After the live-bee demonstrations were pulled off, the crowd was conducted to one of the company's warehouses, where they were fed on hot biscuits and honey. This part of the "program" seemed to take well with all parties.

SUMMER MEETING OF NEW JERSEY BEEKEEPERS' ASSOCIATION

BY E. G. CARR

Following several days of rain, on July 8, the date for the summer meeting of the New Jersey Beekeepers' Association, at

Robt. B. Spicer's apiary, near Wharton, the weather seemed anxious to do all possible to make the meeting a success. A fine view is



Fig. 1.—Beekeepers in attendance at summer meeting of New Jersey Beekeepers' Association, July 8, 1914.

had from the high hill on which the yard is located, and visitors felt repaid for the steep climb.

President C. H. Root spoke on "The Best Hive-cover," which is of the telescoping pattern, three inches deep, and made of any soft half-inch lumber, and covered with 8-oz. duck, the latter brought down and tacked

on the bottom edge. This is then given three coats of good paint, and is held up from the inner cover by $\frac{1}{2}$ -inch cleats. This cover will neither leak, blow off, warp, nor get hot, and does not need frequent painting.

Mr. Spicer explained his method of queen-rearing. He uses the best stock for breeders obtainable, by purchase and breeding. Cells

are started in the upper story of strong two-story colonies or in queenless colonies. The Root cell cup is used, and the started cells are completed in the upper story of strong colonies above the excluders. He uses the smallest larvæ possible to see, cages the cells the tenth day from grafting, discards any dark or defective virgins, cages the virgins in nuclei, uses the dual-virgin plan, and one, two, and three frame nuclei having full-size frames.

After Mr. Spicer's talk all gathered under a tree in the apiary for a group photograph (Fig. 1). At this time a delightful



Fig. 2.—Mr. Spicer exhibiting a frame of cells.

lunch was served to 68 by Mrs. Spicer and her able assistants.

After lunch a paper by Harold Hornor was read, giving his experience with and his mastery over European foul brood. He used the double shake in his work, and from 51 colonies, good and poor, all of which were shaken, in a poor season he secured over 4000 pounds of extracted honey and 315 pounds of wax. He emphasized the importance of keeping *leather-colored* Ital-

ians and requeening every year. He has no surplus at all this season, but expected to requeen just the same.

Perhaps the most interesting feature of a meeting in an apiary are the groups which gather about a hive under manipulation as shown in Fig. 2.

This was the largest and most enthusiastic summer meeting ever held by the association. Several new members were enrolled. New Egypt, N. J., July 16.

THE QUEEN-EXCLUDING HONEY-BOARD; ITS ORIGIN AND DEVELOPMENT

BY ARTHUR C. MILLER

Honey-boards are not quite as old as bee culture, but they date back a great many years. Their origin was in the bars first put across the tops of hives for bees to build their combs to, a practice followed in Greece several hundred years ago. Another early form was one or more holes in the flat top of hives to permit bees to enter tops or upper chambers to deposit honey. From these two we find French beekeepers in the early part of the 18th century putting a slotted top into hives and placing their surplus chambers thereon. About the middle of that century both French and English beekeepers were putting a duplicate slotted bottom into the upper chamber, the purpose being the same as a honey-board to-day to prevent fastening the combs of one chamber to the other.

Thus matters appear to have remained until the so-called "old-fashioned box hive" came into use with its upper chamber for boxes, access to which was gained through holes in the floor of that chamber and corresponding holes in the boxes. This was only an easier way of securing the principle of the slots.

When Langstroth brought out his hive he had a *loose top*, spaced a bee-space above the frames, and this top was perforated with holes, as was the box-hive chamber. With such records as I have at hand I am unable to say whether he was the originator of such loose top or not. Langstroth referred to it as a honey-board and Quinby also speaks of them; but so far as I have learned the separate honey-board originated with one or the other of them.

Not long after, discussions arose as to the desirability of giving bees freer access to the surplus receptacles and that discussion has not yet ceased. With it came debates as to the wisdom of the bee-space above and below it; and the advocates of continuous

passageways waged hot verbal warfare with the advocates of bee-spaces.

With the advent of sections the altercation only increased; and supers with openings exactly matching the top-bars of the hive and used flat thereon were strongly championed, which it will be seen was little different from practices of a hundred years before. As against these were supers set a bee-space above the frames, no "honey-board" intervening. But the bottom of the super was virtually the same.

About 1875 James Heddon brought out his honey-board made of slats with a bee space on its upper surface, the slats being opposite the spaces between the brood-frames, the idea being twofold, to lessen the building of bridge-combs on top of the frames and to act as a deterrent to the queen's passing into the supers. He called it at first a "sink" honey-board because the rim in which the slats were fixed was rabbeted so the slats "sunk" into until one surface was flush and the other bee-spaced. Mr. Heddon and Mr. W. Z. Hutchinson were two of the most ardent champions of this type of honey-board which gradually came to be called the "slatted-break-joint" honey-board.

Dr. G. L. Tinker, on the other hand, was a most ardent advocate of continuous passageways. Being a mechanic of very high order, and making his own appliances, he was very successful in the use of such methods. But he seems to have been troubled even more than the others with the queen going into the supers. Mr. Hutchinson tried making the spaces between the slats queen-excluding; then he tried similar spaces cut crosswise of the grain of the wood, but neither proved workable.

Mr. Heddon writing in 1885 (*American Bee Journal*, p. 262), said that during 1883 and 1884 he experimented with queen-ex-



Rural camp boys from Sydney, Australia, visiting the apiary of T. G. Adamson and G. G. Phillips, Nemingha, New South Wales. (See editorial.) Photo by I. W. Tremaine, of the Sydney Technical College.

cluding honey-boards, but was not at the time of writing satisfied that they were the best practical way of securing results sought.

About the same time perforated zinc, much as we now know it, came into use, but in full sheets for honey-boards it was unsatisfactory, as it would twist and "buckle" and not maintain a true bee-space.

The step of uniting the slats and the strips seems so obvious now that we wonder it was not thought of even before it was.

The inserting of strips of zinc between the slats was described by Dr. Tinker in *GLEANINGS* in 1886, p. 203. James Heddon writing in *GLEANINGS* in 1888, p. 394, says after referring to tacking zinc to the surface of the strips: "Then came the

thought of grooving the edges of the slats and sliding strips of zinc into the grooves as the honey-board was nailed up, which was quicker done, and made a neater and far more attractive job; and C. E. Boyer, W. Z. H., Dr. Tinker, and myself, all thought of this simple device without the aid of each other; but as Dr. Tinker was the first to publish it to the world, no one opposed this priority nor should they." And on the same page Mr. Heddon suggests making the rows of holes in the zinc in pairs, two rows close together as it is now made.

To Dr. G. L. Tinker belongs the honor of the modern queen-excluding honey-board.

Providence, R. I., July 8, 1914.

DANGER OF FOUL BROOD; PREVENTION BETTER THAN CURE

BY L. W. CROVATT

"We have no such thing as foul brood, either of the American or European kind in this, the southeastern section of the country."

"No; but you will have, rest assured of that. It is only a question of time."

I very much fear that I gave a smirk of self-satisfaction when, one day last week, I made the remark in the opening paragraph. Mr. A. Irish, an Englishman of Connecticut, and I were walking on the streets of Savannah. Both of us were bee-

keepers, hence the conversation was simply and solely about the honeybee.

Reflection has only added positive assurance to this convincing line of reasoning. There is no doubt but that foul brood will some day—perhaps within the next few years, who knows?—establish itself in this fair southland of ours, so I am trespassing upon the kindness of the editor and using perfectly good space in GLEANINGS to issue a warning to fellow beekeepers. The biggest beemaster, as well as the smallest (perhaps the one-hive man) should begin to spread the gospel of preparation and thereby safeguard their own interests—*now*.

It is the box-hive beekeeper, friends, to whom we must in some manner carry the work of enlightenment. Thereby hangs our own salvation from a beekeeping standpoint. Tell the unprogressive, ignorant keepers of bees in box hives that he must eliminate his "*gums*," spend a few dollars for modern appliances, or else go out of the business. He will make back his money with interest the first year after changing over to modern methods, and it is especially the fellow with his few box hives "who doesn't yet know that the civil war is over" whom we must convince, first of all, that it is to his personal interest to change over from antiquated methods of a past and forgotten age.

"When foul brood does hit this section of the United States it is going to be a veritable blessing in disguise," my friend continued, "for it will sweep away the black bee from the face of the land; our box-hive men will be put out of business, and it will be the specialist with his hundreds and even thousands of colonies who will then control the production of honey."

Even so; Mr. Irish may be right; and yet, friends, can we stand the cost in actual money to us? Will not the big man as well

as the little fellow, the progressive as well as the unprogressive, suffer alike in losses?

Assured the specialist; the up-to-date-bee-journal-reading man; the wide-awake intelligent man or woman will finally prevail against the disease, but at what cost of time, labor, money, and anxiety?

Would it not be better to spread the warning now far and near—to convert, as it were, the box-hive old-gum man into a modern beekeeper?

It is well worth the trouble, my friends; let us be up and doing.

Now there may be some who would reason like this: "No chance on earth; never any foul brood in this section." Listen—here's the point: If you buy a queen and she comes in her cage with workers as attendants and you introduce the queen to a colony, and the man from whom you bought her had foul brood and did or did not know it, what about the chances of the disease appearing?

Do as the big fellows have advised; turn the queen and her attendants loose in a room near a window with lights down or sashes if you please; recage the queen in a fresh cage and kill every worker and burn the whole shooting-match. Not much effort at that; isn't the precaution worth while?

In conclusion, let me emphasize with all the vigor at my command, that, if you want a queen, be sure to get her from some powerful fair-dealing, painstaking breeder, then your chances are reduced to a minimum from a contagious standpoint.

Foul brood is assuredly a thing to be reckoned with in this "locality" some day, and it behooves us, as progressives in the business, to use every effort to eliminate now and forever the abomination of beekeeping in the Southeast—the box hive and the genus gum. Let's get busy *now*.

Savannah, Ga., April 19, 1914.

TEN GOOD "DONT'S" FOR BEEKEEPERS FEARING FOUL BROOD

BY V. V. DEXTER

For some time I have thought of writing an article on foul brood from the standpoint of the honey-producer. We have had plenty of articles from the bee inspectors and the queen-breeders telling how to cure this disease, but it seems to me that it is a great deal more important to keep from having a disease than to cure it after we get it. Where whole apiaries have become rotten with American foul brood, I hold that it is usually the fault of the person who is caring for said bees by neglecting to keep watch of the brood-nest, and by spreading the disease

from hive to hive. There may be localities where there are so many shiftless beekeepers and so much foul brood that it is impossible to keep bees healthy, but I doubt if there are many such.

Three years ago I had typhoid fever and it was impossible for me to care for my bees as they should have been cared for. In taking off the honey late in the fall we found one colony dead from foul brood and two others diseased, in a yard of about a hundred. We promptly burned them, saving samples of the brood which were sent away

to make sure. Early the next spring that yard was looked over and five colonies showed signs of disease. They were also burned. The next year one had to be destroyed. I haven't seen a sign of disease in that yard since.

Another yard of sixty colonies which I bought had five diseased colonies. The next year only one infected hive was found. Now they are perfectly healthy. If I had fussed with those few diseased colonies, I might have two badly infected yards by now.

Here are a few "Don'ts" which I have found useful:

1. Don't expose to robbers combs from hives containing dead colonies, nor use them if you are not sure that they are free of disease.

2. Don't neglect to examine brood in all colonies at least twice each year.

3. Don't make a practice of feeding unboiled honey, nor of allowing robbers to get any more honey than possible at any time.

4. Don't set out extracting-supers for robbers to clean out.

5. Don't change combs nor extracting-supers from one hive to another unless both hives are known to be healthy.

6. Don't neglect to burn all diseased hives as soon as found unless there is a large per cent of the apiary infected.

7. Don't open diseased colonies when robbers are bad.

8. Don't neglect to get all the information possible on the subject.

9. Don't neglect to tell the dangers of foul brood to your neighbors.

10. Don't make the inspector force you to clean up. Stay clean.

The first "Don't" is good to observe any way. It does no good to let robbers get started on honey of dead colonies, and probably more disease is spread this way than any other. If any symptoms of disease are

seen in dead colonies, melt up or burn the combs immediately.

I find it pays to examine the brood of all colonies at least twice a year. It is good to keep track of the work of the queens anyway. If there is no foul brood in the neighborhood, this examination may be done in connection with other work.

A beekeeper feeding unboiled honey, especially in the open, takes a great risk, for one ounce of infected honey mixed in with the rest might spread disease through the whole yard as well as to neighbors' bees.

I have found that setting out extracting-supers to be cleaned out by the bees is a poor plan, as it seems to wear out their vitality just when they need it most to go into winter quarters. Moreover, if one of those supers is from a diseased colony, it may infect the whole yard.

In extracting at a yard where there is the least possibility of disease being present all extracting-supers and combs should be placed back on the colonies from which they were taken. It is not difficult to number all hives and supers with chalk before extracting so as to know where to return the supers, and it makes it safer and nicer in extracting to use queen-excluders.

Burning diseased hives may seem harsh treatment, but it is not necessary to burn more than the combs and bees. The hive-body, covers, and bottom-board may be saved if they are scorched out.

Does it pay to fuss with a few old bees and some diseased brood and risk ruining the whole yard, and maybe give your neighbor a nice mess of trouble? Remember the combs must be melted or burned any way. It may pay to treat bees if a large per cent of the yard is diseased, but what I wish to emphasize is to care for a yard so that it will get disease only from outside sources.

North Yakima, Wash.

A PERMANENT DEVICE FOR REGULATING THE SIZE OF THE HIVE-ENTRANCE

BY J. E. JORDAN

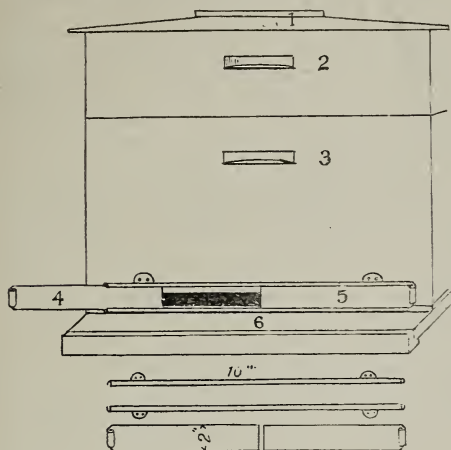
The accompanying illustration shows an entrance-closing device which may be used on a full-sized hive, or with a little modification on a nucleus hive. In the latter case only one slide would be necessary.

I have often been obliged to make a search for blocks of wood to contract the entrance; but, try as hard as I can, I am not able to keep them where I want them. Then, in the event of a severe case of robbing, something is needed at once to close the en-

trance; and a good deal of trouble is saved if one does not have to go on a scouting tour looking for blocks, grass, rags, or any thing else that comes handy. After contending with this sort of thing for some time I devised these slides which we have used with a great deal of satisfaction. Galvanized steel or aluminum should be used, as these materials do not rust and will last forever.

If the colony is being robbed out, simply

push both sliding doors together and the entrance is closed. In the early spring when the colonies begin to breed up, contract



the entrance with a simple push and the job is done. During the honey flow the

entrance can be widened to full width by pulling both doors out.

To the queen-breeder especially, a device of this kind for a nucleus hive is a blessing, for many times the entrance to the nucleus must be contracted or closed entirely, and if one has 750 such nuclei to go over each day, as Mr. J. P. Moore and I have, the importance of this matter is evident. When forming nuclei the entrance of each one must be closed and left closed for a short time. That procedure ordinarily calls for blocks to be nailed on and taken off. Then, as in case of a full colony, there is robbing to contend with and the block or robbing has to be produced again. Most of all, when caging a queen or examining a nucleus for a queen during a time of honey dearth, there will be a hundred robbers around in no time. It has always been our plan to stuff the entrance with grass, but there is no need of this now, when with a slight push of our fingers we can extract or close the entrance.

Morgan, Ky.

NOTES FROM INDIANA

BY S. H. BURTON

LITTLE WHITE CLOVER.

We cannot possibly expect a white-clover crop for two years, as last year's drouth killed out most of it, and this year finished up the young plants that came from the seed. I have searched diligently for a white-clover blossom this summer, and the only ones I have seen were on a well-kept lawn in town. It will be quite a while before southern Indiana produces another white-clover honey crop.

MORE THAN A CARLOAD OF HONEY FROM DAVIESS COUNTY.

This county is looking up in the bee business. One hardware dealer in town advised me that he had sold 17,000 sections up to Aug. 1. If we take into account what beekeepers order for themselves and what is sold by other firms this county (Daviess) produces more than a carload of comb honey yearly.

TEN COLONIES SOLD FOR POLLINATING PURPOSES.

This spring we sold to the Illinois Experiment Station ten colonies of bees for pollinating purposes in their apple-orchard at Flora, Ill. Prof. W. A. Ruth, in charge of this station, reports excellent results from having the bees in the orchard. A number of experiments were tried, such as tying netting over trees to exclude the bees, moving the hives to different parts of the or-

chard and observing if the trees nearest the hives set more fruit than those further away. They will issue a bulletin soon which, I presume, will furnish some valuable data on the relation of bees to fruit.

GOOD LATE FLOW.

After poplar ceased blooming, the bees never "turned a wheel" till Aug. 8, when our fall flow started in good earnest, and I have been on the jump ever since, trying to supply the colonies at our outyards with empty supers. One yard I have in the river bottoms filled the supers to overflowing in ten days from what is locally known as bluevine. I am unable to classify it botanically, but will say that it is a great yielder of water-white honey that is hard to distinguish from white clover. This vine resembles a sweet-potato vine in appearance, and is very prolific in river-bottom cornfields, having a small white flower resembling a miniature morning-glory blossom.

Fall aster and goldenrod are very abundant in this locality; and if I could get the bees to separate the honey and store all goldenrod in the super and all the aster in the brood-chamber it would save a lot of work at sorting time. Fortunately the aster blooms a little ahead of the goldenrod, which prevents a great deal of blending of these two flavors.

Washington, Ind.



The field day of the Ohio State Beekeepers' Association at the home apiary of the A. I. Root Co., at Medina, on July 9 and 10, 1914 See page 758



Beekeepers' picnic held at the Dustman apiary, near Des Moines, July 15 See page 755.

"STUNG." AN INSTANCE OF FEARFUL AND UNUSUAL STINGING

BY OPIE QUEUE

In my diary for 1913, in the space designed for Sept. 17, I have written just one word. It is short. To a stranger it might seem meaningless and absurd. Beekeepers, whether veteran or novice, might even regard it as ridiculous. Nevertheless, the word is there, and it is not only short, but it is pregnant with truth, and I assure you that it will never fail to serve its purpose, namely, to recall to my mind, should recalling ever be necessary, a memorable occasion of my life. This word, as recorded in my diary, reads: "Stung,"—nothing more, nothing less.

I fancy there will be scores of beekeepers who will smile as they read this, and say: "Here is a novice; here is a fellow who harps on trifles and even records such common, every-day occurrences as bee-stings in his diary."

And then I hear another beekeeper say: "But he'll get older by and by." And a third adds: "And wiser, too." All of which goes to show that, though I may be young, and a novice, and may get older and wiser, these friends of mine, even if they be veterans at the game, do not yet know what it actually means to be "stung." Understand: I was not stung by a quack doctor; I was not stung by a real-estate agent nor by a gold-brick concern nor by a mining promoter. Furthermore, I was not stung by a wasp nor a hornet nor by your humble bumblebee. No, I was stung by bees, by dozens of them, by hundreds, yes, by thousands of them. For all I know I was stung to within an inch of my life. Of one thing I am certainly convinced, and that is that, had I not to some extent been accustomed to bee-stings, my life would have been very nearly if not altogether snuffed out. Indeed, even as it is I am very thankful that I was able, by the help of God, to survive.

As I said above, it was on the 17th of September. But to understand why the bees acted in this outrageous manner, it will be necessary to go back somewhat and consider the management and condition of the bees during the summer, and for the benefit of those who may be interested I shall therefore do this, even though in so doing I should expose myself as a very poor beekeeper.

When the white-clover flow came on, I was in possession of two colonies of bees, and shortly afterward I had a swarm, making three. The flow of nectar during the last season was a revelation to me. The

supers gained in weight by leaps and bounds. When the flow was but half over, I had more than a hundred pounds of honey on each of the old hives. About at this time, the end of June, I planned to leave with my family for the West, there to spend the summer vacation. Quite naturally my bees gave me much concern. The honey on the hives was not at all ripe enough to extract. Moreover, the heat during midday was intense. One day some combs on one hive began to sag and melt. I therefore tilted one end of the top supers on each hive up and placed inch blocks under them for ventilation. That helped, it is true, but what was I to do for the summer? I did not feel like letting them act like this, and at the same time I was afraid to take them away. There was nobody in my neighborhood who kept bees or to whom I could, in the few days left, have given instructions sufficient to enable him to manage them properly during the summer months. One or two days before leaving I therefore put another empty super on each hive, placing those that were full above. Thus, with the exception of the young swarm, each hive was five and one-half full stories high, including the hive bodies. I fastened and braced them firmly to the ground, so that there was no danger of toppling over during my absence, and as the weather promised to continue hot for some time I left the top supers propped up as indicated above. Then we went west, leaving the bees just as above described to their own devices throughout the summer months of July and August.

When we returned early in September I was delighted to see that everything pertaining to my bees was in first-class shape. The hives, man-high, still stood as I had left them, and they were fairly boiling and buzzing with busy little workers. But during the first few days I was unable to go at them. I went near them several times, it is true, but that was all. But even so I noticed something about them that was very peculiar. At all other times docile and manageable, they were now quite the contrary. Even while only approaching them they would buzz around me and fly into my face and sometimes even sting without the least provocation imaginable. I attributed this to the large openings under the top supers, which, as I have said, I had left during the summer for ventilation. No doubt some bees had been trying to rob, making them vicious. One night I there-

fore went down to the hives and removed the inch blocks, hoping that now they would cool down. But they did not, and when I went to them for a thorough examination on the 17th of September I got all that was coming to me, and a little more.

It happened in this wise: But first let me tell you how I was armored. I wore nothing on my head, no hat nor anything of that kind, but I had on an Alexander bee-veil. This I had long before carefully sewed up wherever I thought a bee might find an opportunity to enter, and I carefully tucked the lower skirt-cloth under my coat. Then I had on heavy summer underwear and a pair of overalls, the legs of which I stuffed into the tops of my shoes. I also wore a pair of long-sleeved bee-gloves, such as one buys of dealers. Thus armed, with smoker ablaze and hive-tool in hand, I marched bravely to the front.

Now, tell me honestly, do you think that the bees had sense enough to let such a formidably protected foe as me alone? If you do, you are off the track and have another guess coming. I was just the prey these little amazons were looking and waiting for. Barely had I begun to peel off the oilcloth, after taking off the cover, when they roared out by scores and scores. Smoke was as nothing to them. Even the big healthy volumes of puffs that I had funneled into them before touching the hive had not cooled them down a bit. And it was ridiculously useless to give them more, though I tried it. They came out just the same, and wherever they fell down on me, there did they locate. But then, I was a beekeeper, and, moreover, one of four years' standing, and such a one will not be daunted, you know. I thought, if they were absolutely bound to be crazy, why, crazy it was for them. As for me, that made not the shade of a difference to me. The next thing I did was to take off the top super. You see, I just kept on minding my own business. For that matter, however, so were the bees, and the next thing I did was to slap that same super back again without having examined anything. There was no chance to examine anything. I was literally covered with bees, every one of them wiggling and wheeling around, with their little sabers deep, deep into the armor of their foe. Oh! I cannot tell you how many there were. They stung through the cloth of my bee-veil into the top of my head and into my neck; their stings went right through my bee-gloves, unbelievable as that may seem. About twenty or thirty of the little imps got into my bee-veil, though I cannot even to-day see how they could possibly do it. To make

matters worse, my overalls slipped out of my shoes, and there, just above the ankles, they settled down, a dozen or more to every square inch of surface. A mere matter of heavy cotton socks and thick underwear made not the least bit of difference to the vicious little beasts. I got my medicine all right.

Having closed the hive, I slowly walked off in a direction away from my house, for I did not want to have the bees go there with me and sting my little children. About a hundred yards from the hives, at a place where there are several trees and a number of bushes, I stopped to do away with my tormentors. I swept them off my clothes by handfuls, and tried to kill every one. But those that I did not crush got right up again and went at me for the second time. It took me about twenty minutes till I was reasonably clear of the frenzied little things. The dead bees that were on the ground would have measured several quarts, had they been swept up. In places my clothes were literally white from the multitude of stings that remained in them. And even as I walked away from this place several bees kept coming after me, stinging, buzzing, bumping. However, as I went several hundred yards north into a corn-field, and thence in a wide circle to my house, I gradually either killed or shook off all of them.

Now, some may think that it was pain that drove me away from the bees. Such, however, was not at all the case. Though I was stung hundreds upon hundreds of times even on my head alone, the pain, owing, I suppose, to the fact that I had frequently been stung before, was infinitesimal, and I did not give any attention to it. But I did feel fearful of that which might result from so much poison suddenly injected into my system; and, as the following will show, I made no miscalculation.

While I was still at the bees, the stings resulted in nothing extraordinary or peculiar. I felt the stings, it is true, but the pain was hardly noticeable—in fact, infinitesimal. But even while retreating from the hives and going to the shrubs mentioned, action of the poison became apparent. I felt a warm, almost hot, glow over the surface of my whole body. While brushing off the bees, there among the shrubs, a profuse perspiration began, and it continued until I had completed the roundabout way back to my house. So profuse was the perspiration, that, though it was not a warm day, large drops of water streamed down my face and dripped to the ground from chin and nose, and my clothes, even my coat and

shoes, became thoroughly wet. Having removed my veil and gloves, I went into the house and sat down, still perspiring. My wife remarked that I looked "awful." Examination by means of a mirror proved her statement correct. My face was swollen almost to purple. However, I felt fairly well and therefore had no fears.

Now, there was some trifling repair work that my wife had asked me to do, and I needed a small piece of lumber for it. As I continued to feel quite well, I now soon went to the barn and by means of a ladder climbed to the second floor, about seven feet from the ground, to get that board. But when I was up I noticed that something was quite seriously wrong with me. My heart now fluttered and pumped quite violently, and then again it seemed to cease action altogether. I feared that I would faint and fall down. Evidently the poison, together with the exertion of climbing the ladder, though ordinarily but trifling, was getting too much for my heart, so I went down again. I am glad that I did, for as soon as I reached the lower floor everything vanished from my sight. I thought I would faint; but although I felt weak and rather dizzy, I did not. It was only the power of sight that left me. My eyes had given out completely—so much so, in fact, that I could not see a thing. It seemed as if I had suddenly been transported into the darkness of midnight. The action of my heart grew weaker and weaker and was at times not at all perceptible. In a few moments, however, my sight began to return, and, though I could as yet see merely the dimmest of outlines of various objects, I started to walk to the house. Immediately, however, my sight again failed entirely, and I groped the rest of the way to the house, a distance of about 75 feet. As I neared the door I could again see just a little, though

not for long. And thus, for nearly a half hour, my condition continued, fluctuating now to total blindness, and again, after a few moments, to dim and indistinct sight. My limbs, too, became limp and weak, and the action of my heart continued very irregular and extremely faint. Consciousness and reason, however, at all times remained, though at times greatly depressed.

My wife says that I now looked ghastly and was deathly pale. Quite naturally she was alarmed. She ran to a neighbor's and asked him to come over. With his assistance I walked outside into the fresh air, thinking that this would stimulate me. It is remarkable that I suddenly felt an urgent necessity of attending to a common physical want. Still more remarkable, after a free and thorough movement of the bowels, my eyesight suddenly became fully normal, and the action of my heart nearly so. The period of danger was past.

Pertaining to the further effects of the poison a few things yet remain to be told. First, I at no time had any direct pains that were worthy of being called such. Then, though in my first two years of beekeeping every sting that I had received had caused violent and thick swellings, only very slight swellings resulted now, and these only on top of the head, at the neck, wrists, and ankles. But a very odd circumstance is this, that on the following day I felt as though I had done a very hard day's work of physical labor the day before, for the muscles of my whole body were very sore. This one thing I cannot account for—I am glad to say that on the third day I felt in every respect normal, and have been so ever since. When I went at my bees again, I was so thoroughly protected, let me assure you, that history did not repeat. For that matter, I hope it never will.

A NEW BEEKEEPERS' ASSOCIATION

BY OTTO HOLLANDER

Translated from the "Gaceta Apícola de Espana" of January, 1914.

A new beekeepers' association has just been formed in Porto Rico, where beekeeping is spreading very rapidly, known as "The Puerto Rico Beekeepers' Association." Its aim and object are outlined in the constitution and by-laws, which we are publishing in full, in order that our beekeepers may get an idea of some of the problems that confront us and of the manner in which these are solved in other countries.

THE PUERTO RICO BEEKEEPERS' ASSOCIATION.

First—The object of the Society shall be:

1. To promote and foster beekeeping with all of the means at its disposal.
2. To regulate the location of apiaries and endeavor to have laws enacted that will fix the distances between apiaries.
3. To seek to reduce the cost of transportation, both on land and sea.

4. To reduce the cost of the implements needed, such as honey-packages, etc.

5. To classify honey and wax, establishing different grades.

6. To acquire the more important books and periodicals dealing with beekeeping, translating into the Spanish language all of the points which may be of interest, to be published in the form of booklets.

7. To endeavor to obtain all possible information regarding the markets for the sale of honey and wax.

8. To study and promote industries in Puerto Rico in which honey and wax are used.

9. To enforce and strengthen the laws regarding the importation of bees.

10. To take steps to have laws passed prohibiting the importation of honey, and which, after having been re-exported from this country, is considered as honey coming from Puerto Rico.

11. To study the feasibility of forming an association, composed exclusively of the members of the Puerto Rico Beekeepers' Association, which will handle the honey and wax produced by the members of the association.

12. To incorporate the association with the National Beekeepers' Association of the United States.

13. To give a course of lectures and instruction in the different cities.

14. To establish friendly relations with all of the beekeepers' associations in the world.

Second—The association will be formed by all of those who are actively engaged in the culture of bees in Puerto Rico and those desiring to co-operate with us.

Third—The association is formed for a term of ten years, which may be extended for another ten years, and shall be guided by the statutes and by-laws adopted.

Fourth—The expenses shall be defrayed by the dues collected from members, as well as with the donations and subscriptions that may be received.

Fifth—The association shall be known as "The Puerto Rico Beekeepers' Association," and shall have its legal residence at Ponce, Puerto Rico.

Officers: J. W. Van Leenhoff, Pres.; Manuel R. Mejia, Vice-Pres.; Miss Antonia Clavel, Treas.

THE MODERN INCUBATOR AS A QUEEN-HATCHER

Introducing Virgin Queens

BY J. E. HAND

Some time ago, in answer to an inquiry, ye editor made a statement to the effect that artificial incubation has no place in modern methods of queen-rearing. Believing that such a statement, emanating from so high an authority, might create a wrong impression concerning an implement that we have learned to regard as an indispensable adjunct to a queen-rearing establishment, I will endeavor to give a few of the reasons why we favor a modern incubator as a queen-hatcher.

We have learned to regard a correct and uniform incubating temperature as one of the most important factors in successful queen-rearing. While the variation of temperature under which embryo queens will continue to exist, and finally emerge from the cell several days after schedule time, an imperfect queen, is wide indeed, it is equally evident that the highest development is attained only under particularly narrow and well-defined limits. Hence it is clear that any method by which a correct incubating temperature is maintained without a single degree of variation, and free from disturbing elements, will have a long

advantage in rearing queens of the highest development.

The demands upon the commercial queen-breeder are exorbitant, since he is expected to be able to rear good queens in spite of the inclemency of the weather; and if he expects to maintain his reputation, he should adopt the methods that will enable him to meet the expectations of his patrons. During the spring and autumn months, when the nights, and sometimes the days, are cold, it is next to impossible to maintain a correct temperature with queen-cells in nursery cages in a cell-building colony, where the heat center must needs be monopolized by freshly grafted larvae. On such occasions as this it is a comfort to the queen-breeder to know that the incubator will maintain a uniform temperature regardless of external conditions.

For these reasons, as well as others that we might mention, all our queens were hatched in separate nursery cages in a big Cyphers incubator, the same as we use for hatching chicks, under a temperature of 97 degrees. While this is about 2 degrees higher than that of ordinary brood-cham-

bers at swarming time, we would rather have it thus than a little lower, especially since queens that are incubated under a high temperature are invariably handsome in color, and well nigh perfect in development, other things being equal. It is said that the color of combs, as well as the nature of the soil, has an active influence in determining the color of queens; but I am persuaded that temperature of incubation is by far the most important in deciding this matter.

There are several reasons why we prefer the introduction of day-old virgin queens instead of giving the cells the day before they are due to hatch. First, it affords an opportunity to inspect the queens and discard any that are not up to standard quality. Again, we don't like to handle queen-cells any more than is absolutely necessary, especially during cool weather, believing that a uniform temperature, free from disturbing elements, is highly desirable until the queen is 12 hours old, which we regard as the proper age for the direct introduction of virgin queens.

The caging method of introducing virgins was not a uniform success with us, for the reason that in our hands bees behave differently toward a caged virgin than toward a laying queen. Our losses were not only greater than by the direct method, but many survivors bore unmistakable evidence of rough treatment by the bees. Occasionally we would have a surplus of virgins, when we would cage them on the dual plan as mentioned by the editor, page 372, June, 1913. We learned to regard this as a calamity, however, for many would be missing,

while others would be worried by the bees to such an extent as to mar their beauty, as well as cripple their usefulness. Some would be minus a wing or a leg, and others would present that black and shiny appearance, the result of balling. After introducing thousands of queens by every known method, I know of no safe method of introducing a virgin queen to a colony when eggs and larvae are present. Therefore, it is a universal rule with us, never to run in a virgin of any age or condition until three days after the removal of a laying queen.

The plan we finally adopted for the direct introduction of virgin queens is the same as recommended by the late Henry Alley, omitting the tobacco smoke, as well as other minor details that we did not find necessary. First, make sure that the colony has been queenless three days, then open the hive and blow a puff or two of smoke gently over the top bars, and perhaps a little down between them, not enough, however, to stampede the bees. Shake the queen out of the cage, and on to the frames, and quickly close the hive. This method is simple and rapid in operation, and resulted in a lower percentage of loss than any that we have yet tried. Young queens that are run in at the entrance are quite likely to wander out again and get lost unless the entrance is plugged up. As we are opposed to closing the entrance of a hive, we prefer to run them in at the top. They will help themselves to the first honey they come to, after which they will not wander away, especially if of the proper age.

Birmingham, O.

KILLING A BEAR IN A BEE-YARD

BY ELMER HUTCHINSON

When we moved to Northern Michigan, about eight years ago, we were unable to find a vacant house to live in near any of the bee-yards we had located, so we moved into some old lumber shanties near Pioneer. With the exception of a small clearing at one side, they were entirely surrounded by woods. A small spring brook ran near them; there were hundreds of acres of rank, luxuriant, wild red raspberries growing around them, and scattered along the brook were many small swamps, filled with golden-rod and other fall flowers. Scattered through the brush and woods, were thousands upon thousands of pine-cherries, which, when the weather is good, are great spring honey-yielders, helping out wonderfully with the stores, and building up the

colonies in great shape for the raspberry honey-flow. It was an ideal location for bees, and we kept a large number of colonies there, and made the place our headquarters for three or four years.

Then we bought a place two miles from there out in the settlement, and moved there taking part of the bees with us, but leaving about 100 colonies back in the woods. Now it seems that this place was also a good place for bears as well as bees. While living there we had occasionally seen signs of them, but they had never come very near the shanties. That fall an old bear and two cubs got in there and did about \$200 damage, and we moved the bees away.

A year or so afterward, not liking to abandon so good a location, I moved some

bees back there, built a fence of woven wire four feet high, with a strand of barb wire a foot above it, around them, and they were not molested that year (simply because no bears happened about, I suppose).

One day last fall, some time in September, I think, my two sons, Charles and John, went over there to introduce some queens. Charles had about 80 colonies there, while I had 25. About 10:00 A. M. they were back home. Coming out to the shop where I was, Charles said that they had a partner helping them with the bees down west. I asked him if he had any idea who it was. "Bears," said he. Well, I thought, we had better go down and have a settlement with him, and dissolve partnership.

We got out our high-power 30-40 rifles and practiced shooting at a target, then after dinner we took Ned and the buggy and drove down. I wish the readers of *GLEANINGS* could have been there with us, and viewed the scene of devastation, the almost utter ruin of what had been a very fine yard of bees—hives, covers, bottom-boards, and combs, scattered all over the yard, combs partially off and broken, all over the yard, and even carried off in the brush, outside the fence. Things looked worse, and there was much more damage done, than there was at one of our yards after a cyclone had passed over it. As Charles said, "It makes a fellow feel kind o' sick when he first sees it, especially if he owns the bees." We found about two bushels of bees clustered on some bushes near by, and Charles found another good-sized swarm hanging on a bush off out in the brush. We hived the bees, straightened things up a bit, then held a council of war.

We had to build a platform high enough to give a good view all over the yard, also for a short distance back of the yard where the bears came in, on which we could sit and watch for the bears. At one corner of the yard there was a tall maple tree, about 30 feet up to the first limbs. The way the bark was scratched off, the bears must have used this tree for a lookout station.

The two boys wanted to build a platform up in the branches of this tree, but with my rheumatic knee I knew that it would be impossible for me to get up there, so I vetoed that. There was an old shanty near the bee-yard, on the side opposite from the one which the bears used when entering the yard, the roof of which was sloping toward the bees. I proposed that we cut a long hole through the highest part of the roof, then build a platform underneath the hole down in the shanty; by sitting down on this platform all the bears could see of us would

be our heads and shoulders, and if we sat very still they would not be likely to notice us. This we proceeded to do, finishing about 5 P. M. in the afternoon.

After eating our lunch, John and I went down to the brook for a drink. While on our way back I saw Charles standing with his rifle to his shoulder aiming out over the bee-yard. We stopped and waited a moment, then he lowered his gun and motioned for us to come on. He said he had started for a drink, when, looking out over the bee-yard, he saw a bear walk out of the brush coming toward the bee-yard. He stood motionless until the bear passed behind a clump of brush, then he sprang for his rifle. When he next saw the bear it was going out of sight, back in the brush. Well, you can just guess I felt pretty sick to think what a fine chance we had lost by not being up on our platform; we might never have another opportunity like that to get a shot by daylight.

We climbed up on our platform, and sat there, ruminating on our lost opportunity. Not daring to move to brush them away, the sand-flies gathered for a free banquet. Any one who has never sat perfectly still for an hour and allowed the sand-flies of Northern Michigan to roam at will over his person, and to bite when and where they will, has an experience before him that will not be wholly one of pleasure. We had agreed that, if a bear did come, not to shoot it at once, but let it climb the fence and upset a hive or two, just to see it work. We had sat there about an hour, feeding the sand-flies, our eyes glued on the brush back of the bee-yard, seeing nothing but brush, when—we were looking at a bear, black as a crow, hurrying along as though it was afraid it would be late for supper. It came out of the brush back of the bee-yard, and started to go around one corner of the yard. John, thinking it was about to go back in the brush, raised his gun. The bear, seeing the movement, stood up to get a better look at us. Out from the corner of my eye I could see that John was already aiming his gun at it. I saw that, if I got a shot, I must be quick about it. The rifle I had was fitted with globe or peep sights with which a very quick and accurate aim may be secured. The bear was standing a little at one side from where I was sitting; swinging my gun around, the second I had it pointed at the bear I had a bead on its neck, and pulled the trigger about the same time that John fired, our two reports blending as one. Although I had rheumatism in one knee so bad I could hardly walk, I got down off my perch and out where the bear lay about as

quick as either one of the boys did. Each shot struck it in the neck and either one would have been fatal.

It was a good-sized yearling, and very fat. We debated a bit as to whether this was the bear that Charles had seen earlier, or whether there were two of them. We finally came to the conclusion that, even if there was another one, after having seen us, and heard us shoot, it would not come back that night. Anyhow, we were quite anxious to get home and show our game, and may be brag about it a little, for it is considered something of an achievement to shoot and kill a bear, even in this new wild country.

Going back the next morning, we found another bear had been in the yard during the night, and upset three or four more colonies. We kept watch nights after this, until we had the bees moved home; but the one that was left had got aware that some one was around there, and kept out of our sight. All together our loss from this raid was more than \$300. Between bears, forest fires, and one cyclone that passed over one of our yards, we have had some strenuous times here in Northern Michigan; but in the vernacular of the wild West, we are "still in the ring" and still fighting.

Lake City, Mich.

A FURTHER REPORT REGARDING THE SMOKE METHOD OF INTRODUCING

BY MORLEY PETTIT

Some time ago we received three queens, with directions for introducing by the smoke method instead of the cage plan. Reports from this plan are coming in at the present time, and they are very similar to what have been reported in GLEANINGS. I consider that the careful beekeeper who has had experience in experimenting will be successful from the start with this method. It has also been found successful by some beginners, but quite a number have reported lack of success. The same, of course, can be said of the cage-introducing plan. One young man who tried the latter plan for the first this year lost one out of three—that is, he lost every third queen out of several dozen which he introduced by the cage plan. His success with the smoke method was in the same proportion. Another young man introducing queens for the first time this year, has been almost uniformly successful with the smoke method.

In our own apiaries, which are being managed by my sister, Miss Pettit, the smoke method is used exclusively. The other day when we were ordering four dozen queens for requeening during September and October, I said, "Will you introduce these by the cage or the smoke method?" Very positively she replied, "The smoke method," and then she told me about one queen which arrived almost dead, and which was viciously attacked through the screen of the cage when put in to be introduced by the cage plan. She closed up the colony and smoked it according to the smoke method described by Arthur C. Miller, turned the queen in, and next day when she looked in the queen was bright and strong, laying in the usual way.

Mr. Davis, of Tennessee, told me at the St. Louis convention that he and his father used the smoke method some years ago, and discarded it in favor of the starvation plan. They starve the queen for thirty minutes, then open the hive and let her loose on a comb. They find this more generally successful even than the smoke method.

Guelph, Can.

[In considering the smoke method of introducing queens, or any other method, for that matter, we must all bear in mind the fact that the percentage of failures reported might have been as great or even greater if some other plan had been used. The smoke method seems to be holding its own. There are some failures, as must be expected. Some bees seem to be just naturally stubborn.

In this connection, at one of our swamp yards we recently introduced 24 laying queens which had been sent out from a queen-rearing yard some 15 miles away. Ordinary $2\frac{1}{4} \times 3\frac{1}{2}$ -inch mailing-cages were used for introducing-cages. On visiting the yard a week later we found all of the 24 accepted and laying. Our Mr. Geo. H. Rea believes that mailing-cages are more successful for introducing than the regular Miller introducing-cages—perhaps because there is usually a larger amount of candy that must be eaten out. Of course, in case of queens sent through the mails it is a wise precaution to use another cage rather than the one from the breeder, on the principle of erring on the safe side as far as disease is concerned.—ED.]

Heads of Grain from Different Fields



THE BACKLOT BUZZER.

Speakin' of robbers, if the amateur picture man, who spilled the honey this morning when he was takin' a kodak view of the bees, was here now, he'd have to use a movin'-picture machine.

Failure in Rearing Queens in Upper Stories.

In "Fifty Years Among the Bees," page 237, you describe a method of queen-rearing by isolating a comb of brood several stories above the hive. This appears to me a very simple and practical method of increasing a small apiary, such as mine, to which, on account of other employment, I am unable to devote much of my time.

I am a little in doubt as to how to proceed after the young queen in the top story has started to lay. How long should she be allowed to remain with the parent colony before giving the hive body in which she and her brood are located a new stand? and, after removal to the new stand, will your plan of blocking the entrance with leaves for a number of hours, etc., succeed in keeping the bees from going back to the old stand?

Dr. Miller says:

I am sorry to throw any cold water upon your project, but the truth is that I have not been able to succeed when I have designedly undertaken to rear queens in upper stories. Last summer I tried ten cases, and each one was a failure. But in two other cases—I'm not sure whether it was two or three—in which there was no design to rear a queen, but where, for some reason, there was brood above, I was surprised to find a queen laying and the old queen below all right. So it looks as if the thing

can be done, only I haven't the right combination. That leaves it hopeful that you may succeed. I may further say that I also failed in previous years in the very few cases I tried, but at least in one case the bees succeeded of their own accord. In fact, I think that was the first case ever reported in which a queen was thus reared in an upper story.

The young queen may be removed just as soon as she begins to lay, but of course success will be better if she is left till there is brood in 3 or 4 combs. Stuffing the entrance with grass or leaves will work all right, but it isn't necessary if there are as many as 3 or 4 frames with brood. I have found that, the larger the body of bees removed, the less likelihood there is of a stampede. Besides, the bees in the upper story are all young bees, and so they are not inclined to return to their old home as are field bees. Last year I merely set on a new stand the story with all its contents, and it made a good colony all right.

C. C. MILLER.

Wintering in "Clamps" Not Generally Satisfactory; Making Exhibits at Fairs.

I am taking the liberty of asking you a few questions in regard to wintering bees in clamps. How does it compare with cellar wintering? I should like some information on the best method of putting them in—that is, width and depth of pit, number of colonies to put in one pit, time to put them in and take them out, and any thing else pertaining to that method of wintering. The soil is loose sand near the south end of Lake Michigan. I have moved all my bees to the marshes for the fall flow. I see by Aug. 15th GLEANINGS you are doing the same stunt.

The management of our county fair have asked me to make an exhibit of bees and honey. If I do so I will have my exhibit in a tent and my demonstrating-cage near by in the open air. As the premiums are small I shall have to make my compensation by selling honey on the grounds. Any pointers or suggestions you could give me would be thankfully received.

Valparaiso, Ind., Aug. 24. JOHN C. BULL.

[Wintering bees in clamps—that is, if you mean underground, or buried, as described in Mr. Hutchinson's book—has not been very satisfactory outside of northern Michigan. In order to make this method of wintering work well it requires a knoll in sandy soil so there will be proper drainage of water. It will not work in a clay soil that is damp and heavy. For particulars on how to construct, see Hutchinson's book, "Advanced Bee Culture." You would get very much better results in an ordinary cellar; but you must make sure to have plenty of ventilation. It is now considered necessary to have air come freely into the cellar, but never enough to bring the temperature down below 45 degrees Fahrenheit.

The only information we could give you on the subject of bees at fairs would be the article in our A B C and X Y Z of Bee Culture, entitled "Honey Exhibits." In the old editions the article is under the head of "Fairs."

In the way of "pointers" we may briefly suggest the importance of having a good display of comb and extracted honey put up in an attractive form in glass bottles of various sizes; comb honey in individual sections, in shipping-cases; and the larger the exhibit, the better impression it will make. It is also important to have hives, bee-supplies, a colony of bees on the ground, and every now and then give a live-bee demonstration. This work should be done in a wire-cloth cage so that the crowd on the outside can easily see what is being done.—ED.]

The Cost of Producing a Section of Honey

Will Dr. C. C. Miller please tell what is the average cost of a section of comb honey, $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{8}$? The cost of a single section in the flat is one cent. I set it up and put in a three-inch starter. I then put the section in a super and put the same on the hive. I take it off when filled; scrape and clean it, then weigh it, mark the weight of it on a label, and stick the label on the section; then put the section in a carton costing me 60 cts. per 100. Then stick on my label, which cost 60 cts. per 1000, and deliver said section to the consumer.

I want to know the average cost for the production of said section of comb honey. I surrender already. How do we know how much we gain if we don't know the average cost of a section of honey?

Silver Lake, N. H., July 24. FRANK A. GRAY.

Dr. Miller replies:

Your question, as you rightly think, is a difficult one to answer. I would promptly answer, "I don't know," and pass it along. But an attempt at an answer may be a little helpful, even if it does nothing more than to start some one else to give a better answer. You are quite right in thinking the problem an important one to solve. More, perhaps, than at any previous time the question is being raised in the minds of many whether to work for sections or extracted honey. The new law requiring the weighing of each section will set many a section-honey producer to thinking whether he will not do well to change to extracted honey; and in order to settle the question he should know at least a little about the cost to himself of the two kinds of honey.

As you state the problem, the different factors are hardly all just what they should be to fit the case of beekeepers in general; and the probability is that, as you continue in the business, you will change those factors. You estimate sections at \$10 per thousand—a price which few beekeepers pay. You put in a three-inch starter. I'm pretty sure you are losing money by not putting in a third more foundation in each section. You have two labels for each section. That's expensive. A set of rubber stamps could well take the place of labels.

Taking, however, the factors just as you give them, it is difficult for any one else to estimate the cost to you, since you do not give the time occupied in the work you put on each section. There is a wide difference in this regard; as, for instance, some beekeepers will take five times as long as others to clean a super of sections. Another difficulty is that one does not know how much to charge up for your time, whether it be worth \$1.50 a day or much more.

On the whole, why can you not, better than anyone else, figure up the cost of a section? Time yourself; charge up what your time is worth for all the items, and your work at the hives, and add to it what you pay out for material, and there you are.

In my own case, about as far as I have got is to figure that whatever I got more than 3 1-3 cents a section could be counted as pay for my skill and labor. I've never felt that I was overpaid. But the fun of it is something.

Marengo, Ill.

C. C. MILLER.

[We presume that Mr. Gray wants to know, also, something concerning the cost of production of the honey itself. Taking into consideration the fact that the bees get the nectar for nothing, it is necessary to figure only the interest on the investment of bees, hives, and other fixtures, and the cost of the time of the apiarist with the bees during the season. These items should then be added to the cost of the section, foundation, and of the time in preparation.—ED.]

Smoke Method Successful

In the fall of this year I tried Arthur C. Miller's smoke method of introducing queens. One colony was made queenless the day before running the

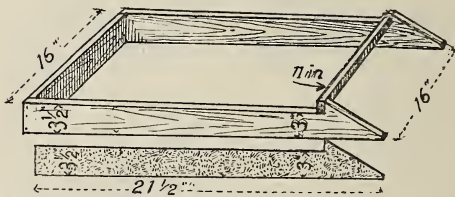
queen in, and the other four had been queenless about four weeks, as I had given queen-cells before going on a holiday, and the queens had failed to hatch or became lost after having hatched. All the colonies were strong ones and two of them had laying workers with the combs literally packed with eggs and larvae. As it was becoming cold, I thought I would unite them with other colonies, but a neighboring beekeeper had some young queens on hand, so I purchased five and introduced them as Mr. Miller instructed in GLEANINGS. To one of the hives with laying workers I gave a comb of eggs and larvae from another colony, with adhering bees. The other I left just as it was, as I wanted to give the method a fair trial in adverse conditions. Some of the colonies had been queenless for quite a while, and some had laying workers. Moreover, there was no honey coming in, as it was very late in the fall.

I still have the five colonies each with a good queen, except one which seemed to be paralyzed in one leg, as if she had been stung there. This queen was in the hive that had been queenless so long, but that had no laying workers.

I think this way of introducing is going to turn out a great success, and it is so very simple and easy if instructions are carried out.

WILLIAM BARNES.

Garrah Willah, N. S. W., June 26.



Form for making a concrete hive foundation, submitted by Ellsworth H. Smith, Portageville, N. Y.

THE SECRET OF THE SONG OF THE BEE

BY GRACE ALLEN

Little bee, I'm listening, listening, listening,
All my soul is reaching for the secret of your song.
My heart is like a muffled thing
With mute on every vibrant string,
While all my thoughts are listening beside your silver song.

Let me hear the whole of it, the soul of it, the heart of it;
Let me feel the fire of it, the ancient hidden flame.
Tell me, are the vivid flowers
That call to you across the hours,
Are these a pulsing part of it, the first, perhaps, that came?

Or is your song a song of life, of eagerness that's maddening,
Of tense and tireless ardor that goes chanting to the strife,
With ecstasy and rapture?
Did your love of living capture
A song, while you went gladdening and plunging into life?

Oh! there's something stirring in it, and there's something steady in it,
And there's something strangely quieting and something sweet and strong,
And something glad and glistening!
For all my wistful listening
I dare not hope to win it—all the secret of your song.

A. I. Root

OUR HOMES

Editor

Heaven and earth shall pass away, but my words shall not pass away.—MATT. 24:35.

Before they call I will answer; and while they are yet speaking, I will hear.—ISA. 65:24.

Whoso liveth and believeth in me shall never die.—JOHN 11:26.

I have again and again mentioned the kind words that come to me in regard to this department of our journal. In fact, we have printed quite a number of these kind words. They keep coming continually. Every mail brings more or less of them. In fact, many of the friends, as you will remember, who are not beekeepers take this journal year after year for this department alone. Now, while these kind words have been coming by the hundreds, and I might say by the thousands, there are some criticisms and fault-findings. Years ago, when Our Homes department was first started, there were quite a good many who objected to my faith in the Bible and to my belief that God hears and answers the prayers of his people. I am led to think that skepticism and infidelity, however, are passing away, and that the Bible is held in greater reverence just now than ever before since the world began. Our periodicals, especially our industrial journals that are making progress, all favor the Bible and Christianity. In fact, if I am correct, humanity now, almost with one accord, agree that the Bible and its teachings are the real forerunners of all real progress in the arts and sciences and in caring for these bodies of ours. Wherever missionaries make a start, not only churches but schools spring up. If the language is unknown the Bible or portions of it are soon translated. Then comes in the printing-press and civilization. Skepticism and unbelief never emancipate the heathen from their darkness. I think I am pretty well informed in regard to these matters, because we exchange with periodicals printed in many languages and in all parts of the world, and I get more or less of a glimpse of what is going on in the world, especially in the way of progress.

Just now I recall three persons who are objecting to the Bible and to its teachings, and to my belief that God answers prayer. These three keep writing to me every little while. One of them, a man older than I am, who, I think, has been a skeptic all his life, jokingly writes me that, instead of my converting him over to my faith, he hoped to convert me eventually over to his faith; but, if I remember correctly, *his* faith is no faith at all. He does not accept the Bible as the word of God; in fact, he questions

whether there is any God *anywhere* to direct the affairs of this vast universe. I have not always replied to these three friends. Sometimes I think it useless to reply; and then, again, I sometimes fear that arguing the matter only makes things worse. I do not believe in long arguments such as Christians used to have years ago in regard to doctrinal points. Now, I hope the little illustration I am going to give you will not hurt anybody, even these three friends I have spoken of. This is the story:

When I first began to succeed with the Italian bees it made quite a stir in this community. One poor man came into my store one day (I think he lived off in the woods somewhere) and said he wanted to talk with me a little.

"All right," I said.

Then he began something as follows:

"Mr. Root, I am told you claim that every hive of bees and every swarm of bees has a king or a queen."

I assented. Then he went on:

"Well, if you will just give me a little time and listen to me, I think I can convince you that you are mistaken."

I asked the man if he kept bees, and he said he had kept them all his life. I asked him if he had movable-comb hives, which were then a comparatively new thing. He said he had no use for any such "contraptions," or something to that effect. Now, under the circumstances what use would there have been in holding an argument? I did not make any reply. I reached for my cap and asked him to follow me. He tried to talk and go on with his argument on the way; but I made little or no reply. When we arrived at the apiary I opened a hive, took out a comb, showed him the yellow bees, found their Italian queen, let him see her lay, and his astonishment was so great that he forgot all about his desire to argue. In fact, how *could* there be any argument when he was compelled to admit that I had shown him more about bees in a *few minutes* than he had ever even dreamed of in his whole lifetime?

Now, I hope the three good friends whom I have mentioned will not feel hurt, when their eyes rest on this, if I suggest that the opponents of Christianity, especially those who declare Christians are all deluded hypocrites, are about on a par with the poor man who made a trip of several miles in order to teach *me* bee culture. As an illustration I am going to give you a few sentences from a letter I received recently.

I have read what you said about working to destroy the squash-bugs and protecting the vines on Sunday. It seems that at some times you attach far more importance to God's commands than you do at others, and that you seem privileged to do what you would deem a sin if done by another.

My good friend, are you not in error? The commandment reads, "Remember the sabbath day to keep it holy;" and in other places it is explained we shall drop our week-day avocations, or, as I understand it, we should desist from all *unnecessary* work. A farmer must feed his stock on Sunday and take care of his milk if he is a milkman—that is, he must take care of it in some way so it will not go to waste, and so the babies and children who are dependent on it will not suffer in health. The Savior, you may remember, suggested that if a domestic animal fall into a pit we should pull it out, even if it *was* on Sunday. I believe all Christians agree that it is proper to work in order to avert the destruction of property—that is, where a little work would save a large amount of property, a good Christian should always be ready to take off his coat and go to work. I remember one Sunday when there was a big wind-storm when the people were in church. On the way home one of our good deacons found a large tree across the road so he could not well get home until the tree was removed. A crosscut saw and some axes were procured, and off went their coats. Did anybody think *less* of their Christianity?

Now, it is not always easy to decide what work should be done and what should not, so as to be consistent with God's command; but I believe the laws of our land and the laws of God will let each faithful follower of the Master decide this largely for himself. If he makes an honest and sincere decision, even if he *is* wrong, I am sure the loving Savior will never lay it up against him. Let me illustrate:

I have told you about starting a Sunday-school up in northern Michigan where there was none. I started out early Sunday morning and worked hard, inviting and pleading with the men, women, and children. It was in the spring of the year, and a beautiful sap day. My good neighbor Hilbert had a big sugar-bush, and all of his children and some of his neighbors' children were busy as bees gathering sap, and he did not see how they could be spared to go down to the Sunday-school where I had permission to use the church, nearly a mile away. I told him that, if he *would* give permission, we would go around to all the sap-trees and dip enough out from the pails so none of them would run over if he would

let me take all the hands down to the Sunday-school. His young daughter, Alice (bless her memory!) was full of enthusiasm about the Sunday-school, and she flew around like a butterfly among the big trees and ladled out the sap while I carried it to the smaller trees that were not running very much. As a result by 3 o'clock p. m. we had a rousing Sunday-school to start out with, and that Sunday-school is going yet—the school that was started, as I have told you, more than a dozen years ago; and there is a nice little church there, too, composed mostly, I think, of the Sunday-school scholars, who will, many of them, *remember* that bright spring day. Now to get back to the squash-bugs:

All gardeners know by sad experience what damage such bugs may do in just a few hours or even minutes; and I think about half an hour's work effectually broke up and scattered the gang that was determined to eat up my vines that warm Sunday evening; and just now I am enjoying the fruit of that half-hour's work in the shape of the most luscious cantaloups I ever tasted. The seed was sent me by a good beekeeper to whom I had sent some dasheen tubers. Don't you think, friends, the writer of the above who pitches into me about working on Sunday was somewhat like the man who was going to convince me by argument that there is no king nor queen at all in a hive? Now he takes me to task once more as follows:

In your account of the drowning boy's rescue by Wesley you state that your prayer that Wesley's next step would find higher footing was answered. Will you kindly explain in just what way God answered? Did he make the water shallower than it had been before your prayer? And if so, has it remained shallower ever since?

Well, friends, some of you may think at first glance that the above is a "stumper" if you will excuse a slang word. I think there *is* a rocky bottom to that swimming-pool. In answer to my little prayer, "Lord, help!" did the great Father of the universe raise or lower that rock? In the first place, I did not think of dictating to the great Father as to *how* he would lend me help to avoid having on my hands and shoulders a drowned *man* as well as a drowned boy. In fact, if Wesley had gotten into trouble because he could not swim, I was ready to go in after him, realizing that I was risking my own life in so doing, because he, a strong man, in his drowning struggles, might easily pull me under with himself. There was a *terrible* necessity for help from somewhere, for the frightened boy who stood near by did not volunteer any sort of help. Under the circumstances, did my

prayer in reality have any thing to do with the depth of the water when Wesley took one more step ahead, with the surface of the water up to his chin? I confess, my good friend who propounds this question *would* have me in a tight place were it not for God's promise given in one of my texts—"Before they will call, I will answer." It requires some strength of faith, I admit, to expect that God in his infinite power and wisdom foresaw this event, *perhaps* at the creation of the world;* therefore the rock that gave Wesley a higher footing is right there where it has been for ages past. At the time I gave up my bee-smoker rather than get into an expensive lawsuit, another smoker came from friend Corey, away off in California, and was placed on my desk, in answer to my prayer. At the time I mentioned it, a friend reminded me that the smoker was started by mail *before* my little prayer, "Lord, help!" was uttered. When I presented the matter to my good pastor, the Rev. A. T. Reed, he smilingly turned to the promise I have mentioned, that God would so order events as to get his children and followers out of trouble, even *before* the trouble came.

Since this terrible war started, one of the three friends has asked me the question whether God planned for such a terrible and cruel war; and then he added something like this:

"Yes, I know what you will answer. You will say God *permits* Satan and evil men to go to certain lengths," etc. Now, friends, I honestly admit the above is indeed a perplexing question. It is a question that is perplexing the whole world just now, and it might be wisdom for us all, while we are doing every thing we can for peace, to wait a little and let future events answer the question by their unanswerable logic. We have already been reminded that some terrible wars in the past have brought about peace and good will in a way that perhaps could not have well been accomplished without the war; or, perhaps, we might add,

* I shall have to confess that I am constantly tempted with, I think, the rest of humanity, by trying to measure God by our own feeble comprehension. We forget, or we can not believe, or perhaps I should say *keep in mind*, that we get in our brief span of life only a *glimpse* of nature and of nature's God. We can not realize that he is omnipotent and omnipresent, although he strives to teach us over and over again in his holy word. To assist our faith he says, "But the very hairs of your head are all numbered." Now, that does not apply to any *one* individual. It must mean all humanity, or at least all humanity who regard him as their heavenly Father. He is past and future all at once, and all in one. We can hardly get even a faint glimpse of the resources at *his* command to grant that little prayer, "Lord, help!" no matter by whom it is uttered. In the 55th chapter of Isaiah we read: "My thoughts are not your thoughts, neither are your ways my ways, saith the Lord."

when humanity was in its infancy, there might not have been any *other* way to bring about progress in the world. The Revolutionary War of 1776 gave birth to our American republic. The late civil war in this country in 1861 put an end to the black-slave traffic, not only here in America, but pretty nearly in the whole wide world. The war with Spain rescued Cuba from her heathenism. You may recall that I spent one winter in Cuba, and gave a pretty full account of what our own nation accomplished in that direction. A skillful surgeon cuts and mutilates a human body in a way that seems terrible to an onlooker, but the patient is oftentimes (if not always) delivered, not only from suffering, but from speedy death. Perhaps it is true that in this crisis we hardly know what to pray for; but God's loving children can always come to him with that little prayer, "Lord, help!" and with the assurance that the prayer will be heard and answered in *some* way in his own good time. If those who reject the Bible would look about them and see what it has done to benefit mankind in every *conceivable* way, I think they would be ready, like the poor friend who was going to teach me bee culture, to accept what they can see with their own eyes and understand. I admit there is much in the Bible I do not understand; in fact, it is beyond my feeble and circumscribed intellect. But, thanks be to God, much of it is getting to be plainer every day of my life as I grow older; and there is so much good, a sort of good that comes from nothing else in the way of literature, that I am astonished almost every day because so few seem to have got hold of it and are ready to say, "Love ye your enemies; do good to them that hate you." Where do you find any other book that takes such ground as that unless they *copy* it from the Bible? And this plea for "peace and good will" runs all through it from Genesis to Revelation. It is true, it gives a history of sad events and of what bad men have done and *said*; but these bright texts flash out and sparkle, here and there, from the beginning to the end of the book.

Let me repeat once more a little incident.

Shortly after my conversion a neighbor, who was an intemperate man, drove his wife and family out into the cold one winter night. I could not talk with him in that condition; but I made up my mind I would plead with him at the first opportunity when I found him sober. One stormy day I found him in a little shoe-shop with a few of his old cronies. I tried to talk with him; but the whole crowd turned on to me and

my religion; and they said such awful things about Christians, preachers, and all, that I was literally "snowed under." I realized I had made a blunder; and while I used that little prayer, "Lord, help!" I pushed my foot in among the scraps of leather that lay scattered thick in that disorderly shop. All at once my eye caught sight of a little scrap of paper. I think it was *while* I was praying for help from above. Mechanically I picked up that little bit of paper and read it. After reading it myself, I asked permission of the crowd to read it aloud. They had seen me pick up the paper from the leather scraps, and here is what I read:

But I say unto you which hear, Love your enemies, do good to them which hate you, bless them which curse you, and pray for them which spitefully use you. And unto him that smiteth thee on the one cheek offer also the other; and him that taketh away thy cloak forbid not to take thy coat also. Give to every man that asketh of thee; and of him that taketh away thy goods, ask them not again. And as ye would that men should do to you, do ye also to them likewise. For if ye love them which love you, what thank have ye? for sinners also love those which love them. And if ye do good to them which do good to you, what thank have ye? for sinners also do even the same. And if ye lend to them of whom ye hope to receive, what thank have ye? for sinners also lend to sinners, to receive as much again. But love ye your enemies, and do good and lend, hoping for nothing again; and your reward shall be great, and ye shall be the children of the Highest; for he is kind to the unthankful and to the evil. Be ye therefore merciful, as your Father also is merciful.—LUKE 6:27-36.

The shoemaker jumped up in alarm and said something like this:

"My God! how did that piece of paper ever get down among those scraps of leather in my shop?"

The profanity and vulgarity of the crowd was at an end, and my exhortations for better lives were respectfully listened to. Then I asked them all to kneel down while I closed with prayer. It was, I think, the first time I ever knelt and prayed in a public place like that; and no doubt it was a broken and boyish prayer; but it *did the work*. The man who abused his family gave me his promise to do better. He did not promise to stop drinking entirely, but from that time forward not only he and I, but the family, were fast friends. His boys were regularly in my Sunday-school class.

Now, there is more yet to the above. When I opened the door to step out (feeling a joy in my heart that can not well be expressed), the druggist came out of another door, for the drugstore adjoined the shoe-shop, and there was only a thin wooden partition between the two. There was a little crowd in the drugstore as well as in the shoe-shop, for it was a stormy day. The druggist said, "Mr. Root, will you please tell me where in the Bible you found that passage you read to the men in the shoe-

shop? The partition is so thin we heard all that was going on, and were laughing at your discomfiture; but *I* want to say, that what you read from that little bit of paper would *save the world*, even if all the rest of the Bible were lost and gone forever."

The above hearty indorsement was from a man who was not at the time a professing Christian. Dare any of you undertake to say there was no answer to prayer in this transaction? When I was overwhelmed by their sneers and sarcasm the little bit of paper came to my rescue. Did that just *happen* to be in that little shoe-shop among the scraps of leather, or did God so plan it that when in trouble and distress that little torn scrap of the Bible should help me out? and did he so plan that I should have *two* audiences instead of one, when I made that plaintive prayer for my intemperate friend and the others who were ridiculing his holy word?

THE DEFEAT OF INJUSTICE.

Whosoever will be great among you, let him be your minister; and whosoever will be chief among you, let him be your servant.—MATT. 20:26-27.

In our issue for August 15 I mentioned telling my good mother that the little text about loving our enemies and doing good to them that hate us was to the great wide world an *unexplored region*. Since then the terrible European war has broken out, and I am ever so much *more* impressed with the sentiment I voiced at this time about rendering good for evil, as it is literally true—yes, clear up to this *twentieth century* an "unexplored region." In that same issue I gave a clipping from the *Sunday School Times*; and I told our readers that if there was a call for it I would have it printed in large type so that elderly people and everybody else could read it easily. Here it is:

THE DEFEAT OF INJUSTICE.

No one can ever afford to think about any injustice he receives. It is disaster and destruction to do so. It is like deliberately lifting a glass of poison to our lips and swallowing it. Injustice inflicted upon us never harms us until we dwell on it. While we ignore it, and do right, it is powerless against us. When we begin to turn it over in our mind, it starts its murderous * work upon us. It soon exagger-

* *Murder* is exactly the right word. Right here (with the help of strong drink), is where insanity, suicide, and murder get in. Look about you and see if I am not right.

ates itself, blinds us, rankles, inflames, embitters. It breeds self-pity, which soon reduces us to a condition of worse than helpless uselessness. Jesus paid no attention to the awful injustices of his lot. We can not afford to do other than he did, but with our lesser injustices. If love is our master-passion, "thinking no evil" and "bearing all things," we shall live emancipated from the misery of dressing our own wounds. Such wounds heal quickly when we are lovingly busied with the needs of others.

There you have it, friends. I confess that at first glance some would think the *Sunday School Times* had almost *overdone* the matter; but I tell you they are right about it. For almost forty years I have been testing the matter of returning good for evil, of forgetting an injury or an insult or an affront, just as soon as possible. Get your mind on something else. I know it is hard sometimes; but just hold fast to the little prayer I have given you—"Lord, help!" Get busy; and before you know or realize it you will have forgotten it entirely, and be happy and joyous.

Our friends will recall that at various times I have spoken about meeting happy surprises. Well, the follower of Christ Jesus—one who is really in accordance with the clipping above—will in due time meet with happy surprises, for he is right along

in the line of that joyous and happy throng who said to the Master, "Lord, when saw we thee an hungered, and fed thee? or athirst, and gave thee drink?" etc. You see these people had been so busy in doing good, right and left, that they had been losing sight of self entirely, and they had forgotten all about their loving ministry to poor suffering humanity.

Somebody recently said of Gladstone that if we wanted to get a glimpse of him at his best, we should have to watch for an opportunity and show him some unkindness—that is, if you should happen to have a *chance* to do so, and just see how quickly he would put himself out of the way to do *you* a favor. I know it seems almost wicked to suggest such a thing; but he was a true type of that kind of humanity. "Bless them that curse you; pray for them that spitefully use you."

Now, these leaflets are printed to be sent out free of charge. They are to be sent broadcast out "on the waters;" and if I do not see any good result from them in this world, I shall have faith to believe I shall in the world to come. I hope they may be floating about and read after my work here in this world has ceased. Do not be backward in telling how many leaflets you can distribute among your friends, whether a dozen, fifty, or a hundred or a thousand. They will be sent gladly.

Your old friend,

A. I. Root.

Sept. 15, 1914.

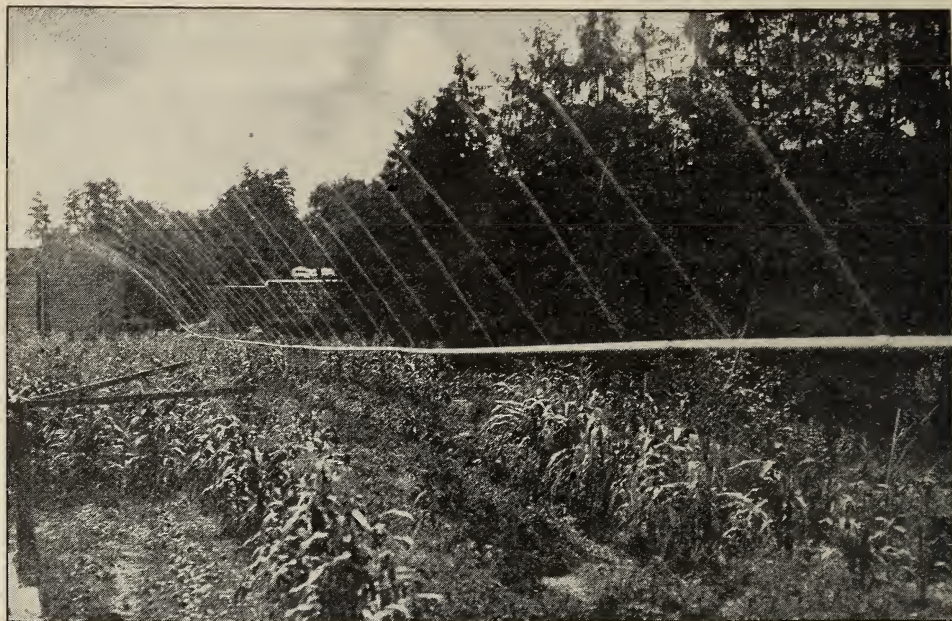
HIGH-PRESSURE GARDENING

SUMMER SHOWERS WHENEVER YOU SAY THE WORD.

Although I have been either gardening or in touch with gardening for almost 70 years, I have never before, until the present time, enjoyed the great privilege of having a veritable "summer shower" on my garden whenever it seemed needed. About the first of August I started what is called the Skinner system of irrigation, on our garden, which is 75 feet wide and 260 feet long. As it is very desirable to use the team when plowing, and a horse for cultivating, I did not want any posts or supports standing in the way of the team. Accordingly we stretched a $\frac{3}{8}$ braided wire cable from the house on the north to a telegraph-pole on the south. In order to test the system more fully the sprinkling arrangement covers only the north side of the garden. On the west side is a row of evergreen-trees for a

windbreak. On the east side is a little row of apple-trees. A galvanized-iron pipe one inch in diameter runs part way, and then a $\frac{3}{4}$ -inch pipe, and both perforated every yard, and a brass nozzle screwed in. With a pressure of about 40 lbs. from our city waterworks these pipes throw a stream fully 30 feet on each side. The pipes are suspended just high enough to clear the horses' heads when they are cultivating. By rotating the pipes (which are suspended on roller bearings) the whole of the garden is sprinkled just as nicely as a summer shower would do it.

Now, to tell you just how much this accomplishes, let me explain that the ground was so wet in the spring that we were compelled to plow it when it was *not* in good condition. After plowing, a succession of cold heavy rains made it just like mud; and when dry weather came it was almost



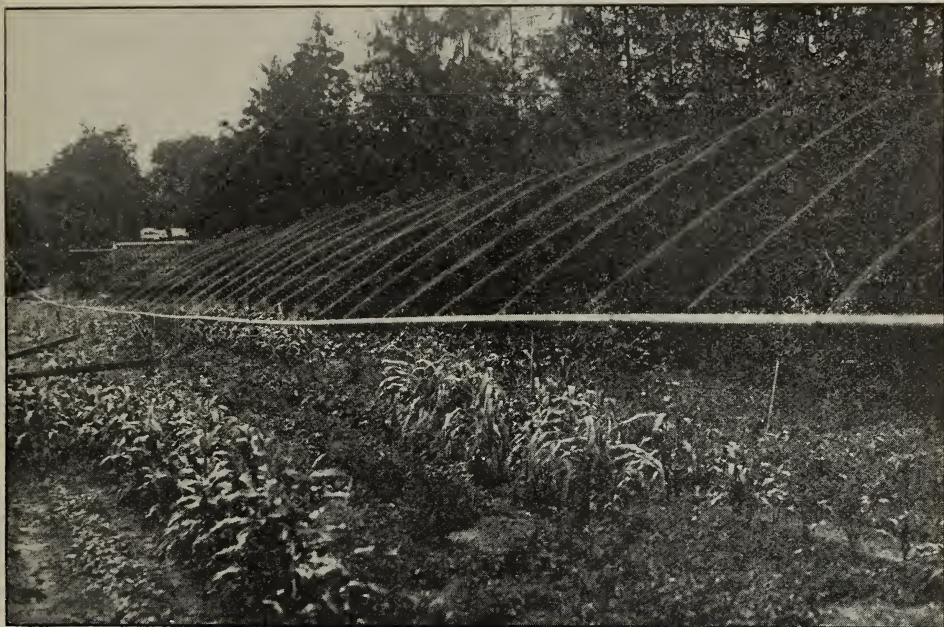
Overcoming drouth by the Skinner system of sprinklers.

impossible to break up the clods (that we have on our Medina clay soil), and get the ground into reasonable tilth; and since then, if we do not cultivate or hoe the garden at the right time after every shower, it is still a mere pile of clods. Along in July we got most of the lumps flattened and crushed so things began to grow once more on the "high-pressure" principle. Mrs. Root stands for Ohio; but when I commenced on the soil up here after working the friable Florida ground I became disgusted and almost felt as if I wanted to stay in Florida all the year round, even if it is true that here, with many things, we get fair crops at much less expense for fertilizer than we do in Florida. Those who have worked a clay soil like our own are well aware that, if they can get on to the ground with hoe and cultivator at just the right time after a shower, the soil stirs very easily. A great many times, however, it is difficult to do this work at the opportune moment. If you get to work too soon after a shower you are in the mud, and this will not do at all. If you wait too long, the clay soil bakes almost as hard as a brick. By the way, we do all our sprinkling just about sundown to avoid loss of water by excessive evaporation. I noticed the manufacturers of the sprinkler said that, if used properly, it entirely prevents clay soil from baking—that is, you can keep the ground loose and friable with very little work. This I find to be true. I can take my hoe before

breakfast during this month of August and stir the soil around my pet plants just as easily and as nicely as I can down in the Florida sand; and it is just wonderful how the corn, beans, peas, potatoes, cauliflowers, dasheens, sesame, helianthus, and all these new things, respond to the water applied just right, and to the stirring of the soil around them to let in the air. Just an hour ago (it is now Aug. 20) I took a look at my row of Hubbard squashes. At the north end of the garden under the sprinklers they are bright and thrifty—no withered leaves. At the lower end of the row, where there are no sprinklers, the leaves hung down drooping, and the vines seem ready to die; and it was so with every thing else.

I am going to write to the manufacturers, telling them there is just one trouble with their invention—it makes the *weeds* grow just *fearfully*;^{*} but with such nice friable

^{*} I suppose I should mention one real drawback to this sprinkling system or any other form of irrigation in regions where heavy rains are frequent, sometimes at a season when we do not expect them. It is this: When you have your ground irrigated just right, and a heavy rain should follow immediately after, if the wet weather continues, your irrigated ground will be too wet, and your irrigation at such a time may do harm instead of good. A relative of mine had several acres of celery. At much expense he arranged for sub-irrigation. His new apparatus worked so well that he rather overdid the application of water; and, even though it was in the latter part of the summer, some heavy rains came on that lasted several days, and his artificial watering ruined a large part of his celery. It behooves us, therefore, to be a little careful, and apply just *enough* water and not be tempted to put on too much.



A "summer shower" at the word of command.

soil it is no work at all to keep the weeds down and out, so our dasheens are now, some of them, a yard tall, and we are already using it for stews. The little suckers that grow around the main plant are the nicest for what we call oyster soup; and if we bank them up, so as to have the soil *bleach* the shoots, they will be all the better. The sesame plants I have spoken about are now full of buds. We expect to have ripe seeds in a short time. The *helianthus* is now quite a little higher than my head, covered with yellow flowers. It looks exactly like an artichoke. I have to be careful about hoeing them, because the roots shoot under the soil for a distance of 18 inches or perhaps two feet. These are, I suppose, the ones that bear the tubers. We have to be careful about hoeing among the plants for fear of cutting these tuber-forming rootlets.

After the above was dictated Huber took some views of my artificially irrigated garden; but before I proceed to describe the pictures accompanying it, I want to digress a little.

Quite a little criticism has appeared in these pages in regard to the way in which The "Luther Burbank Co." does business, sending out circulars to thousands of people, urging them to become "honorary members" by paying a certain sum, etc.

Well, along in the early summer I learned that our druggist had a variety of seeds of

the "Burbank creation." I accordingly looked them over and purchased four packets. The one I have tried to picture, the "Rainbow Corn," has been a delight to myself and friends all summer. Below is what I find printed on the packet:

BURBANK'S IMPROVED RAINBOW CORN
(EXTRA SELECT);
25 CENTS A PACKET.

Beautiful and exquisite in colorings as orchids—a flower in bloom from the time the young shoots appear until the heavy frosts of autumn; nothing like it for decorative effects, for garden, cutting, or corsage bouquet. Leaves variegated with brilliant crimson, yellow, white, green, rose, and bronze stripes.

I am very glad to say, the above description is not, in my mind, an exaggeration. I think it is altogether the most beautiful and startling *ornamental foliage plant* I have ever come across. It is something after the fashion of the old-time ribbon grass; but there is a much greater variety of colors, and the colors are ever so much brighter. Away up north, near the Soo Canal, there is a resort (Manitou Island) where wealthy men and women of fashion congregate every summer. I described my visit there in these pages some years ago. The most attractive thing on the island (although it is an *attractive* place) is the gorgeously arrayed women of wealth from almost all over the world. Their fantastic costumes, with not only brilliant but glittering colors, make quite a fairy show.



Burbank's "Rainbow" corn. Indian corn as an ornamental foliage plant.

Well, just as soon as this ornamental corn began to push out its tassels it reminded me vividly of the beautiful women so gorgeously arrayed, *almost* rivaling the "lilies of the field" as we read in the scriptures. I am glad of an opportunity to give Burbank full credit, if he did indeed create this beautiful plant, and I think it is quite reasonable to believe he might do so in a series of years by making selections. This summer I have been testing toward a dozen varieties of sweet corn; and in these tests I find quite a few stalks showing, faintly, striped leaves. If you go to the poultry shows you will see what poultrymen have done in working for pet feathers. Now, if we should work corn in the same way for *foliage* instead of grain, it is not at all strange that the result is astonishing.

In the two large pictures you get a glimpse of the Burbank corn right under the sprinkling-pipes; and in the smaller cut you get a glimpse of the variegated leaves; but, of course, the camera does not give the colors.*

* I think this variegated corn will soon be offered for sale at a reasonable price, for I have seen it also growing in Akron, O. At this date, Sept. 12, the ears (some of them *four* on a single stalk) are tasseled out with brilliant crimson silk which looks like an ostrich plume. I cannot tell you how much

Now a word about the three other packets of Burbank's stuff. The variegated-corn packet costs 25 cents for, I think, about 25 grains. Another packet, labeled "Burbank's Improved Early Bantam Corn," costs 10 cents for 15 grains of corn. I could not discover that there was a particle of difference between this Early Bantam and some that costs only 10 cents for half a pint. There was also a packet of "Improved Early Sweet Corn" at 10 cents for 25 grains. This, like the Bantam, is not different from or better than (so far as I could discover) common early sweet corn at 20 cents a pint. The last was Burbank's sweet sunberry (wonderberry) (a Burbank creation). The above is, of course, an improved variety, or at least it is so stated, of Child's wonderberry, of which so much has been said and written. Owing to the persistent ravages of the little black flea beetle I lost all my plants but one. That one is now in bloom, and it looks exactly like a plant growing wild down in Florida that bears berries in the greatest profusion. This improved berry, however, may be better in quality. I am going to try to carry a plant down to Florida if it does not mature fruit here.

Now a word about the pictures. In the left-hand lower corner of the picture is an improved Senator Dunlap strawberry sent me to test. You see it is putting out a pile of runners already. Next is ordinary sweet corn; then comes a row of dasheens, but they are hardly visibly in the picture. Then we come to a little patch of ornamental corn. Right above this, over toward the evergreens, is the helianthus that has been discussed quite a little. It now contains a profusion of beautiful yellow sunflowers on a smaller scale, and they produce little seeds that look like sunflowers also. See description of the *Helianthi* on page 318, April 15. I will report further when it is time to dig the tubers. A row of sesame-plants is close by the helianthus, but hardly visible.

THE DASHEEN IN CANADA.

Just a line to renew old acquaintance. Wife and I spent the winter in Lakeland, Florida, returning April 1. Lakeland is a lovely spot, high and rolling, with lots of lakes; three inside the corporation. You will remember those small dasheen tubers I got from you. Well, I have some fine plants, the stalks at the ground as thick through as one's wrist or more, and lots of little plants coming up all around them. I might get a snapshot of them just to show you how they can be grown in Ontario. Now, what I want

seed I shall get; but if every ear that is set produces a fair amount, I may be able to include two or three grains with the dasheen tubers that are to be given to paid-up subscribers.

to ask is, how can I tell when they are fit to take up or use? Does the top show any signs?

Innerkip, Ont., Aug. 19.

J. ALPAUGH.

My good friend, your dasheens are fit for use at any time; but in order to preserve the old plant I would just dig down and pull those young suckers. They are especially nice for a stew. Cook them as you would oysters or mushrooms; then put in some crackers, and we think you will find them a very appetizing and nourishing dish. Very likely they will not mature in Canada—that is to say, the tubers will not keep over winter; but just before frost comes, or after a light frost, dig them all up and use the tubers for baking as you would bake a potato. The stalks are good for a stew at any stage of growth. The tubers can also be stewed with the stalks cut up in pieces, say an inch long. You will soon learn how to use them after you get a taste of them, I think.

SEED POTATOES FOR PLANTING IN OCTOBER AND NOVEMBER DOWN IN FLORIDA AND OTHER SOUTHERN CLIMES.

Our friends will remember that almost every fall we have trouble in getting seed potatoes to plant in our Florida home. F. W. Gibbons & Co., of Boston, have for years made a business of keeping potatoes in cold storage, to be shipped south for fall planting. Just now we have a postal card from a good friend in their employ. As it may be of some benefit to our Southern readers, we submit it below:

Friend Root:—Just a line as the thought comes to me. The old crop of potatoes, as you know, closed out at extremely high prices—3 cts. per lb., so that there are none for Florida planting. Take your new crop. Lay the tubers on burlap or bagging in the kiln where you dry lumber by artificial heat, and keep them there two weeks. This will hasten germination; also expose them to heat under the greenhouse benches.

E. E. HARRINGTON.

Boston, Sept. 19.

Last winter, when we were selling our Red Triumph potatoes, there were quite a few that were hardly large enough for market—say a little smaller than a hen's egg. These we spread out on a cement floor in our wood-shed. This floor was partly underground and moderately dark. I think we must have spread out a barrel of them, and they seem to have kept all right. When they were beginning to sprout Wesley planted some in September, and will plant more of them this month. If we can keep over our potatoes for seed in this way it is going to be quite an item. I have before mentioned quite a number of our Florida neighbors who kept potatoes (spread out on barn floor) over, say, from March or April until October and November. Of

course the potatoes shriveled up, and the sprouts are short and stubby; but I believe it is generally agreed that this sort of seed is the very best. If they are put out in the sun or in a good strong light just before planting the sunlight kills the scab almost if not quite as effectually as the formalin and corrosive-sublimate solutions. I will report further how these kept-over potatoes turn out.

SQUASH-BUGS, ETC.

Mr. Root:—I have just finished reading GLEANINGS; and in your article on gardening, squash-bugs are mentioned. I have tried a remedy for the bugs which I have never seen in print; and as it proved entirely successful in my case I will send it to you.

Make a thin batter of fresh cow manure and water, and apply with a whisk broom to the vines. The bugs will immediately decamp. It does not add to the beauty of the verdure for a while; but later, when they outgrow their covering, they seem to have been fertilized by the application. I have tried it on muskmelon-vines only, first in Wisconsin, and yesterday on vines in my garden here.

"HONEY TEA" FOR INDIGESTION.

While writing to you I will mention another "cure" which I call honey tea. A couple of table-spoonfuls of honey to a pint of water, boiled together for fifteen minutes, removing the scum as fast as it rises. Half or all of it, if desired, is drunk hot, one half to one hour before breakfast, and it can also be drunk cold any time during the day, when thirsty. It relieved me entirely of indigestion and constipation, which had troubled me for many years.

Westgate, Cal., Aug. 12.

ALLEN JENKINS.

Thanks for your suggestion, my good friend. Your remedy for squash-bugs is the same as given Sept. 1, p. 626, last year. There is another good thing about it—an overdose would not harm your plants, as is the case with different kinds of poison; in fact, the more lavish you are with the preparation the better it will be for the vines.

TWO CROPS FROM THE SAME GROUND AT ONE AND THE SAME TIME.

For some time back I have been feeling happy to see the pictures on the outside cover of our great agricultural periodicals. I should greatly enjoy reading all these periodicals all the way through; but there are now so many of them that about all I can do with them is to look at the pictures, especially the pictures on the outside cover. Well, the *Iowa Agriculturist* gives us a cover picture in the August issue that deserves more than passing comment. It shows, first, a beautiful cornfield, many acres in extent, of rank, thrifty, beautiful corn which, at the time the picture was taken, was waist high; and right in among the corn is shown a large group of beautiful young girls and women. I do not suppose these bright young women (all happy-looking) grew all their lives in that corn, but they are certainly an Iowa product.

God bless Iowa and all the corn-growing States. If the good people away off across the water, instead of killing off their boys and girls, and men and women, would use their time and energies and intelligence in something like *corn-growing*, what a happy

world this might be just now! On the contrary, while I write I suppose there are hundreds and *thousands* who are shedding their life's blood in an unaccountable desire to cut each other to pieces. May God help us.

TEMPERANCE

"OHIO DRY;" NATION-WIDE PROHIBITION,
ETC.

I hardly need say to our Ohio readers, and perhaps to a great part of the people of the United States in general, that just now the good people of Ohio are massing their energies as never before to drive intoxicants entirely from our State, and to put at least one more State among those that have already adopted prohibition. Judging from past experience, and some sad and bitter experience, our great foe, and I might say our very *greatest* foe, is the indifference and stupidity of people who *might* vote if they would just take the pains to do so. When we get things up to such a point that everybody votes one way or the other, we shall achieve a big victory. Two years ago, when we failed ignominiously, it was found by careful search that thousands of good men, through indifference or pure laziness, did not go to the polls *at all*; and the saddest part of it is that those who did not vote were, by far the largest part, temperance people. The reason is very apparent. The wets made such a thorough canvass that they got hold of every man who could possibly be urged, by fair means or foul, to vote. They are doing this again and again. Here in our own county of Medina, people excuse themselves from going to the polls by saying, "Oh! Medina Co. will go dry any way; and the loss of one vote will be insignificant," etc. Now, our Ohio churches, Sunday-schools, Endeavor societies, are all enlisted in the work; and if we do our part as faithfully as the liquor-dealers do theirs, we certainly shall win. It can not be otherwise. It is *incredible* that there should be more *bad* voters in Ohio than good ones. Let me give you an illustration:

Just last week a man asked me when I was going to Florida. I told him I would go right after election. He said he did not think he wanted to wait till Nov. 3d; and when I remonstrated about losing his vote he said something like this:

"Why, what *particular* issue is at hand just now?"

We were both in a hurry, and I did not have time to question him further. But I

have been wondering since then if he were not on the wet side, or so near there that he did not care very much about it. Now, if there are any like him whose eyes meet these lines, let me present the matter this way:

The wets have no other incentive, no other goal, than to make a little *more* money. They will tell you we want the money for *revenue*. They do not propose to build up churches, schools, nor any thing else, to *benefit* humanity. Their great plea is, if not their *only* plea, that saloons "make business." If we ask them to define what *kind* of business, they do not have very much to say. They are going to "make *money*" by voting wet, and making money is their sole object in life. Of course, they say a \$1000 license or tax may be used to build good roads, etc. But the dry States and dry towns and cities are going *away ahead* in the way of such improvements. This is acknowledged now everywhere. Now, the dries are working *for the good of humanity*. It is *not* money they are after. It is for the benefit of the people. It is to protect the people. It is to lessen the number of criminals. All this has been gone over and over. We on the dry side are working for godliness, righteousness, temperance, and purity. Some of you may say that those who vote wet are not *all* bad men. Well, even if that is true, all bad men vote wet. Did you ever hear of a gambler, a highway robber, a pickpocket, or any sort of criminal, who did not vote wet and join in with the wets? Do you, my friend, want to be in that crowd? On the other hand, all good men and *women* are most if not all on the side of the dries. The wives and mothers—especially the mothers—if they had a chance would vote dry without question, for the sake of their sons and daughters, if nothing more; and the wets are fighting woman suffrage, tooth and nail, for they know what the result will be if the women get the ballot.

Now, is it possible that the voters of our State of Ohio should be found *more than half wet*, with the explanation I have given above? Let me digress a little.

On page 568 of our issue for July 15 I

spoke of a father and son who got into a quarrel through drink, and the father killed the son with a blow with a broomstick. Now, this old father was a good man, or was so considered by his neighbors. He had been the village blacksmith for many years, and was esteemed and beloved by all the neighborhood. He had only one failing, and that was—*strong drink*. When he was arrested for murder the good friends readily furnished bail, and he was given his liberty. But his peace of mind was gone. He pined away over the sad event till he was almost a skeleton. Well, just a few days ago, on a Sunday morning, when his folks were away, they found, on returning, his dead body hanging from the limb of an apple-tree back of his house. Murder, then suicide! Do some of you ask how this father and son procured their drink here in a proverbially dry county? Just over the dividing line, near where this man lived, is Lorain Co., and that county has saloons. Saturday nights buggies and automobiles are strung about in every direction quite a distance from that saloon. A wet county adjoining us is cursing the people of Medina Co. The county-seat of Lorain Co. is Elyria, a city of some 15,000 inhabitants. They have had many conflicts, but the wets beat every time, with the help of the still larger neighboring city of Lorain, in the same county. I told you of stopping in Elyria long enough to have my automobile charged. While hurrying along one of the busiest streets I passed a large show window with plate-glass front. That elegant and expensive show-window contained nothing but half-pint bottles labeled "whisky" in big letters. They were spread out in quite a display to attract the attention of passersby. I stood stock still in astonishment and indignation. I said to myself, and I may have said it out loud, "Is it possible that here in Elyria, on the busiest street, there can be found a man so lost to all sense of shame that he will unblushingly put out such a display as this? The exhibition is not only a disgrace to the city and county, but it is a disgrace to the State of Ohio." I looked about the premises to see if I could catch a glimpse of the fellow (I can not call him a man) who would have the cheek and hardihood to make a display like this, not only to tempt those who are fighting strong drink, but to tempt the boys on the street. May God help Lorain Co. and Elyria to rule out such an exhibit in open daylight before our people.

Now, then, friends of Ohio, there are only about thirty more days left, by the time this reaches you, to get hold of indifferent people, and urge upon them the importance

of voting. A just and righteous law, if I am correct, forbids our furnishing money or any thing else to get an indifferent man to vote. The wets trample this law under foot almost without scruple; but we who are followers of the Lord Jesus Christ certainly can not think of trying to avoid or elude our Ohio laws or the laws of the United States. We can, however, take our automobiles and buggies and visit or talk to voters whenever we have good reason to think that such work will help to emancipate our State from the rum power. Think, friends, what it would mean to be able to say in November that Ohio is not only central in geography, but that it is *central* in taking the lead in *temperance, purity, and righteousness*.

VIRGINIA GOES DRY BY 25,000 MAJORITY.

May the Lord be praised for the good news we have from Virginia. We clip the following from the *Cleveland Plain Dealer*:

25,000 VIRGINIANS VOTE DOWN LIQUOR; DRY RETURN IMMENSE MAJORITY WITH ONLY FOUR CITIES OPPOSING LANDSLIDE—ELECTION RESULTS WILL CAUSE ANNUAL REVENUE LOSS OF \$700,000.

RICHMOND, Va., Sept. 22.—Virginia to-day joined the dry States of the nation by returning a majority of more than 25,000 for Statewide prohibition.

Not more than six out of the 100 counties in the State returned a majority against the proposition, and only the cities of Alexandria, Danville, Norfolk, and Richmond, out of the nineteen cities, gave a majority against Statewide prohibition.

The election results will cause a loss in revenue of more than \$700,000 annually to the State. The State becomes dry on and after Nov. 1, 1916. The general assembly has yet to pass the law to govern the State under prohibition.

While we are rejoicing in the above, it pains me more than I can tell to see my good friends of the *Plain Dealer* give us no better words of encouragement than that the people of Virginia are going to lose \$700,000 in *revenue*. Great heavens! What does "revenue" amount to compared with the saving of our boys from drunkards' graves? Are the States that have been dry for years *suffering* from a lack of *revenue*? Are not the *mothers* of our land, to say nothing of the fathers, entitled to more consideration than revenue, even if they do not (just yet) win suffrage? For the time being I can change my little prayer, "Lord, help," to—"The Lord *has* helped." Blessed be his holy name!

We quote the following from the Anti-Saloon League Year-book for 1914:

If the \$538,815.03 of revenue from liquor were distributed among the 2,060,612 people in Virginia, it would be but a small fraction over 26 cents for each man, woman, boy, and girl in the State; and in a recent statement by the auditor he says that if prohibition should prevail the tax rate would need to be increased only three-fourths of one mill on each \$1 of assessed real and personal property—or

7½ cents on the \$100, or 75 cents on \$1000, etc. He further says that, if proper returns of property for taxation were made by citizens, the rate of increase would be hardly more than four cents on each \$100 of property.

SALOONS, AND THEIR INFLUENCE IN THE VICINITY OF MANUFACTURING AND MINING COMPANIES, ETC.

We clip the following from *Bulletin* No. 15, sent out by the Colorado Fuel & Iron Co.:

THE STRUGGLE IN COLORADO FOR INDUSTRIAL FREEDOM.

THE EFFECT OF CLOSING SALOONS IN THE COLORADO COAL-MINING DISTRICT.

"The officers of The Colorado Fuel & Iron Company believe in the policy adopted by certain important railroads, prohibiting the use of intoxicating drinks by their employes both on and off duty; but many of the coal-mine employes demand their liquor, and, unfortunately, some will not work where it cannot be obtained.

"Experience shows that where no saloon is immediately available many workmen go as far as is necessary to find one, and there spend Saturday nights, Sundays and holidays, often returning unfit for work until after a day or two of rest, and the general service is always greatly disorganized by the incapacity of a few.

"With the advent of the Federal troops all saloons in the coal-mining districts were closed, and as a result the efficiency of the workmen has greatly improved, the average production of coal per man increasing 10 per cent.

"This has confirmed the view long held by us, that if saloons and drinking could be eliminated from the coal districts, not only the miners but the companies would be greatly benefited.

"What I have said applies specifically to the Colorado Fuel & Iron Company; but I think, in a general way, it is true of the coal-mining industry in the State."

Denver, September, 1914.

A PETITION WITH OVER 1000 SIGNATURES FROM THE EASTERN PENITENTIARY OF PENNSYLVANIA.

Out of a total of 1478 prisoners confined in the Eastern penitentiary, 1008 have drawn up and signed a petition which will be submitted to the next legislature seeking State-wide prohibition.

The petition is probably the strongest and most unique sociological plea ever made against the liquor-traffic. Without a word or even suggestion from Warden McKenty, it is said, the prisoners confined behind the forbidding walls of the institution signed their names, and in many instances volunteered to go before a legislative committee and tell how the saloon evil has wrecked their lives.

The vote was taken on Independence Day, and made public to-day.

On each petition was an appeal to make Independence Day memorable by signing the petition.

Three months ago the *Umpire*, the little paper published by the convicts, started a crusade against rum. Letters began to flow into the editorial room telling the personal stories of prisoners who claimed that were it not for whisky they would not now be serving time in prison.

The editor of the paper, himself a prisoner, was so impressed with the letters that he drafted a petition and sent it around the prison for signatures.

To-night he said: "I am greatly pleased with results. It proves, and conclusively, too, that the great majority of State-prison convicts were brought to ruin through the saloon evil. If the legislature desires evidence we are ready to supply witnesses.

Think of it: 70 per cent of the men here assert that rum caused their downfall. Think of the wrecked homes, broken-hearted mothers, wives, and sisters."

The *Umpire's* editor has a bulk of letters that relate the personal experiences of convicts. Here is one written by a man serving ten years:

"I am serving a long sentence for manslaughter. Years ago I became involved in a saloon fight. One man was killed. My dear wife was forced to suffer a worse fate. She has struggled along with the little ones while I have been locked up. Her heart is broken; but good woman that she is, she keeps up the struggle for existence. Rum caused my downfall. Why should the sociologists and so-called learned men who are interested in penology go outside a prison for facts? The facts may be obtained in any penal institution."

SHE WAS WILLING TO LET HIM HAVE HER JOB.

The following story is vouched for by the president of a State Sunday-school association, and will be read with interest by the majority of women—especially those who have had experiences with John Barleycorn in their own families.

In an Indiana town there were three churches and one saloon. The people decided to do all they could to vote the town dry at a coming election, and called a great mass meeting of the Christian people to map out a plan of campaign. A large crowd gathered, and the subject was discussed pro and con by all in attendance. A very clear and concise plan of action was decided upon, an open siege inaugurated against the one citadel of the liquor-traffic in the town.

Just before adjournment there came down the aisle an elderly man, well dressed, even courtly in appearance and manner. He asked for the privilege of speaking a moment, and the request was granted.

"I do not have to tell many of the people here to-night who I am," he said. "Most of you recognize me as the saloon-keeper whose business you have planned to attack to-night. You see I'm an old man. This has been my occupation for years, and I know no other job. If you vote this town dry you will ruin an old man when he is at an age where he can not possibly take up a new business. If you will withdraw your effort from this campaign, I'll promise to run a first-class saloon and observe every restriction of law. I promise it because I haven't any other job if you persist in your campaign and it terminates successfully."

After the saloon-keeper had finished speaking, and returned to his seat, there came down the aisle a modest little woman, plainly dressed, who also asked to say a word. Her request was also granted.

"I do not have to tell you to-night who I am," she said. "You know me as the washerwoman of your village—the woman who does six washings and four ironings every week. I do this to support my children and keep up my home. I have to do it because my husband spends his earnings down at this man's saloon. Now, if you Christian people will work so as to vote this town dry, thereby saving to our home and children the money that rightfully belongs there for its support, I will be very glad to let this saloon-keeper have my job.—*Cleveland News*.

A KIND WORD FROM AN 83-YEAR-OLD VETERAN.

GLEANINGS has been an inspiration and a pleasure to me for nearly 40 years—almost since the first issue—with the exception of about a year when laid up in the hospital. I am now nearing 83 years, and practically unable to read, and for two or three years have not been able to do any thing with my hives or supplies. These lines are for your edification. For several years I published a newspaper, and I know that, when a fellow hits the bull's eye, he likes to hear the bell ring. GLEANINGS has certainly hit the bull's eye, and I suspect the tingling of the bell is sweet music to your ears.

Belleville, Kan., June 9. O. A. A. GARDNER.

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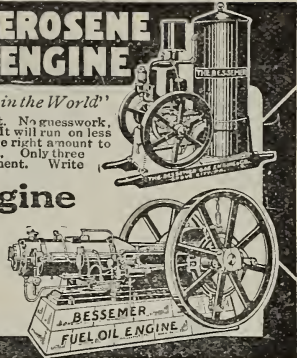
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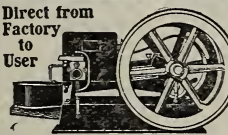
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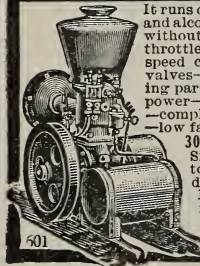
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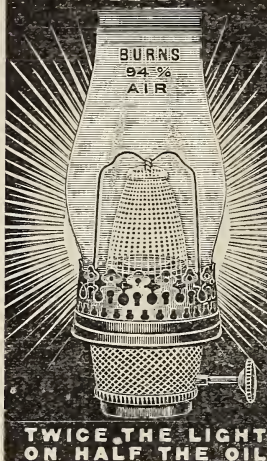
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the ALADDIN on our easy plan. No previous experience necessary. Practically every farm home and small town home will buy after trying. One farmer who had never sold anything in his life before writes: "I sold 51 lamps the first seven days." Another says: "I disposed of 34 lamps out of 31 calls." Thousands who are coming money endorse the Aladdin just as strongly.

No Money Required
We furnish capital to reliable men to get started. Ask for our distributor's plan, and learn how to make big money in unoccupied territory.

STUDY BEE CULTURE BY MAIL

There is money in Bees if you know how. Make a good living from Bees or keep down the high cost of living. Always a good demand for men who know Bee Culture. Just the opportunity you have been wanting—**learn at home.** You can make your spare time count and finish this course this winter by beginning now. This excellent course prepared by **E. R. Root**, the foremost exponent of Scientific Beekeeping. Also splendid correspondence courses in General Farming, Truck—North or South, Poultry, Fruit, Flowers, Greenhouse, Soils, Dairying, Farm Management, Farm Book-keeping, Farm Veterinary. Writing for the Farm Press, Mushrooms, Ginseng, etc. Original and largest school devoted exclusively to teaching farming by mail. Write to-day for **Free Booklet "How to Make the Farm Pay More,"** also temporary low rate easy terms, full particulars. (Which course interests you?) (No agents.) Free sample lesson from General Farming Course on request.

551 Laird Building, American Farmers School, Minneapolis, Minn.



BOOK ON Dog Diseases AND HOW TO FEED

Mailed Free to any address by the author
H. CLAY GLOVER, V. S.
118 West 31st Street New York

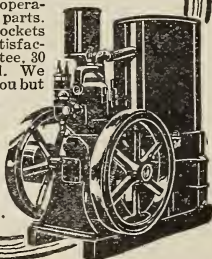
\$18.30 PER HORSEPOWER

Can you buy a horse for \$18.30? No! Yet you can get a six horsepower

DETROIT FARM ENGINE

for \$18.30 per horsepower. This engine runs on Kerosene, Gasoline, Alcohol or Distillate with surprising economy. Saws wood, grinds feed, pumps, churns, separates, makes light, does any job around the farm. Simple in operation. Only 3 moving parts. No cams, gears, sprockets or valves. Positive satisfaction ten year guarantee. 30 day money back trial. We have an engine near you but want farmer agents everywhere. Write for particulars.

Detroit Engine Works
313 Bellevue Ave.,
Detroit, Mich.



\$18.30
2 1/2 to 18 H.P.

INCREASE YOUR HONEY CROP!

by introducing some of Leininger's strain of Italians. Have been a breeder for 25 years. No better bees in America. Untested, 1, \$1.00; 6, \$5.00 Tested, 1, \$1.25; 6, \$6.00. Breeders, \$10 each. Every queen guaranteed.
FRED LEININGER & SON, Delphos, Ohio

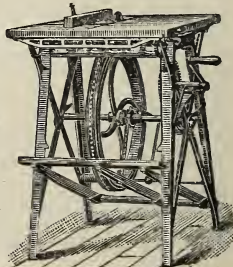
BARNES' Hand and Foot Power MACHINERY

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices. Address

W. F. & JOHN BARNES CO.,
545 Ruby St.,
ROCKFORD, ILLINOIS.



How to Keep Bees

BY ANNA BOTSFORD COMSTOCK

This is an excellent book for the beginner. Nothing better. We cordially recommend it to all who are learning beekeeping by their own effort. Having commenced beekeeping three times, the talented author is in a position to furnish the right kind of advice. You can not go wrong in getting this book. It is charmingly written and easily understood. Price \$1.10 postpaid.

THE A. I. ROOT COMPANY, MEDINA, OHIO.

ITALIAN QUEENS!

Our Prices:
July, August, September

Prices:	1	6	12	25	100
Virgins	\$.50	\$2.75	\$5.00	\$9.50	\$35.00
Untested .....	.85	4.50	8.00	15.50	62.50
Select Untested	1.00	5.00	9.00	17.00	65.00
WARRANTED	1.10	5.50	9.50	18.50	70.00
Tested	1.50	7.50	13.50	25.00	90.00
Tested Breeders	3.00				
Sel. T'd Breeders	5.00				

Your choice of either Golden or leather-colored queens by return mail.

The A. I. Root Company purchase queens from us, and we refer you to their letter of endorsement below:

Medina, Ohio, Feb. 6, 1914.

The Penn Co., Penn, Miss.:

Replying to yours of Feb. 3, we would state that we have bought a large number of queens of you. We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect. Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries can not be made.

THE A. I. ROOT COMPANY,
by E. R. Root, Vice-pres.

Address Orders to

THE PENN CO., . PENN, MISS.

W. H. LAWS

is prepared to take care of all your queen orders the coming season.

Twenty-six years of careful breeding places Laws' queens above the usual standard.

My bees, in my own and in the hands of others, have taken first premiums at the leading fairs all over the United States; and, in the hands of single individuals, have gathered over a car of honey in one season.

Tested queens ready now. Each, \$1; 12 for \$10. Untested, after April 15, breeding queens, about fifty of the finest ready at any time; each, \$5.00.

W. H. LAWS, Beeville, Bee Co., Texas

Queens - Queens

**Bees by the Pound
and Full Colonies**

From a superior strain of THREE-BANDED ITALIANS. . . Hardy, gentle, and they are hustlers. . . . Guaranteed to please you.

Send for My 1914 Descriptive Catalog

I have a large stock of modern BEE SUPPLIES always on hand. ROOT'S GOODS at factory schedule of prices, packed and delivered to my station. All orders will receive prompt and careful attention.

Earl M. Nichols, Lyonsville, Mass.

Queens by Return Mail.

SATISFACTION GUARANTEED.

F. J. Wardell, formerly head queen-breeder for The A. I. Root Company, is now prepared to furnish queens of his gentle stock. The bees are so gentle that their owner seldom needs a veil—just the thing for the beginners that are afraid of stings. The editor of GLEANINGS who saw these bees and handled them, says they are the gentlest bees he ever saw. They are bred direct from the Root \$200.00 queen.

PRICES:

Untested	\$1.00
Select Untested	1.25
Tested	2.00
Select Tested	3.00
Breeders	\$7.50 to \$10.00

Send all orders to

F. J. Wardell, Uhrichsville, Ohio.

Queens of MOORE'S STRAIN of ITALIANS

PRODUCE WORKERS

that fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Untested queens, \$1.00; six, \$5.00; 12, \$9.00.

Select untested, \$1.25; six, \$6.00; 12, \$11.00.

Safe arrival and satisfaction guaranteed.

Circular free.

J. P. MOORE,
Route 1, Morgan, Ky.

Queen-breeder

ITALIAN QUEENS

This is the first appearance of my ad. this season, though I have run nearly 600 nuclei—been filling many large orders for some of the largest beekeepers of the country, who know the worth of good queens. Prices: Untested, 75 cts. each, \$4.25 for 6, \$8.00 for 12. . . . Satisfaction in all cases.

Queens go by return mail.

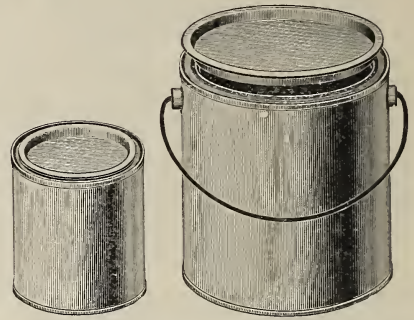
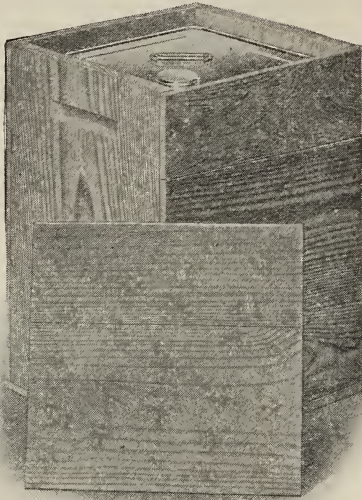
L. H. ROBEY, WORTHINGTON, W. VA.

BEE SUPPLIES

in January.

Send your name for new 1914 catalog out
Dept. T, CLEMONS BEE SUPPLY CO.,
128 Grand Ave., Kansas City, Mo.

CANCO HONEY CANS



Spencer Friction-top Cans
(Patented)

Approx. Capacity	Per 100 in 50 lots	Per 100 in 100 lots	Per 100 in 500 lots	Per 1000 lots or over
2 lb. Can	..	\$2.25	\$2.15	\$20.00
2½ lb. Can	..	2.75	2.60	24.00
3 lb. Can	..	3.00	2.85	28.00
5 lb. Pail	\$5.00	4.75	4.50	42.50
10 lb. Pail	7.00	6.50	6.25	60.00

60-Pound Square

One in a Case. . . . Price 32c per case.
Two in a Case. . . . Price 60c per case.

Special prices quoted for carload quantities

American Can Company

447 West 14th St., NEW YORK
Monroe Building, CHICAGO



**NEW BINGHAM
BEE SMOKER**
Patented

Bingham Bee-smoker. . .

Nearly Forty Years on the Market

The original bee-smoker was invented and patented by Mr. T. F. Bingham in 1878, '82, '92, and 1903. The Bingham smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey-producers of the world. No one other invention in apiculture has been so important as little could be accomplished without the bee-smoker. For sale direct or at your dealer's. Postage extra.

Smoke Engine, 4-inch stove; weight 1¼ lbs.	..	\$1.25
Doctor, 3½-inch stove, weight 1½ lbs.	..	.85
Conqueror, 3-inch stove, weight 1½ lbs.	..	.75
Little Wonder, 2½-inch stove, weight 1 lb.	..	.50
Two largest sizes with hinged cover.		

A. G. Woodman Co., Grand Rapids, Mich.

Containers for Comb and Extracted Honey

We offer this year a very complete line of cartons for comb honey—any size or color, with any desired printing. Bottles, jars, and cans for extracted honey with capacity ranging from that of a tumbler to a barrel. Special attention is directed to our assortment of Friction-top Pails and to tin cans of ½, 1, and 5 gallon capacity. Get full information, prices, and samples.

The A. I. Root Company, Medina, Ohio

Classified Advertisements

Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the Classified Columns or we will not be responsible for errors.

HONEY AND WAX FOR SALE

HONEY LABELS.—Lowest prices. Catalog and price list free. PEARL CARD CO., Clintonville, Ct.

FOR SALE.—Extracted clover honey, quality A1. Price 9 cts. per lb.

JOS. HANKE, Port Washington, Wis.

FOR SALE.—3000 lbs. extracted honey, in new 60-lb. cans, 8½ cts. Comb honey, net weight, 14 cts. per lb. JULIUS GENTZ, Wabeno, Wis.

FOR SALE.—Comb and extracted honey. Tennessee smoked hams and bacon. Write for prices.

J. E. HARRIS, Morristown, Tenn.

FOR SALE.—Well-ripened white-clover extracted honey, put up in 60-lb. and 10-lb. tins. Write for prices.

D. H. WELCH, Racine, Wis.

FOR SALE.—Finest orange and palmetto honey in new 60-lb. cans, 8 cts.; in barrels, 7 cts.; mangrove honey, 6 cts. ARTHUR E. AULT, Bradenton, Fla.

FOR SALE.—Best quality white-clover extracted honey in 60-lb. cans. State how much you can use, and I will quote price.

L. S. GRIGGS,

711 Avon St., Flint, Mich.

FOR SALE.—Light amber honey, 8½ cts. per lb. California sage honey 10 cts. per lb. Two 60-lb. cans to a case. Sample of either 10 cts.

I. J. STRINGHAM, 105 Park Place, New York.

FOR SALE.—Well-ripened clover and buckwheat extracted honey in 5-lb. pails and quart jars. Sample, 10 cts., which may apply on order.

M. C. SILSBER, Rt. 3, Cohocton, N. Y.

FOR SALE.—Comb honey, 24 4¼x1½-inch sections, fancy white, \$3.00; No. 1, \$2.80; extracted sweet clover, 7½ cts. in 120-lb. cases, f. o. b. Cochrane, Ala.

JOE C. WEAVER.

FOR SALE.—Beautiful white-clover-basswood blend of extracted honey in new 60-lb. net tins. Carload or less. Ask for a sample, stating how much you can use.

E. D. TOWNSEND & SONS, Northstar, Michigan.

FOR SALE.—By Oct. 15 60,000 lbs. light extracted honey, two 60-lb. cans to case; new cans; fine body, and mild-flavored; 8½ cents by case; ten cases, 8 cents per lb.; samples for stamp.

H. G. QUIRIN, Bellevue, O.

FOR SALE.—Raspberry, basswood, No. 1 white comb, \$3.00 per case; fancy, \$3.25; 24 Danz. sections to case, 6 to 9 cases to carrier. Extracted, 120-lb. cases at 9 cts.

WILEY A. LATSHAW, Clarion, Mich.

RASPBERRY HONEY FOR SALE.—Left on the hives until it was all sealed and thoroughly ripened. It is thick, rich, and delicious. Put up in new 60-lb. tin cans. Price \$6.00 a can. Sample by mail, 10 cts. Said 10 cts. may be applied on order for honey.

ELMER HUTCHINSON, Rt. 2, Lake City, Mich.

Dealers in honey, ask for a late number of the *Beekeepers' Review* containing a list of 75 members having honey for sale. Address THE BEEKEEPERS' REVIEW, Northstar, Michigan.

HONEY AND WAX WANTED

WANTED.—Comb, honey and beeswax. State what you have and price. J. E. HARRIS, Morristown, Tenn.

WANTED.—Comb, extracted honey, and beeswax. R. A. BURNETT & Co., 173 So. Water St., Chicago.

WANTED.—Extracted honey. Send sample and best price. State quantity you have for sale, and how packed. W. HICKOX, Forsyth, Mont.

WANTED.—Honey, extracted and comb. Will buy or handle on commission. Beeswax—will pay highest price. HILDBRETH & SEGELKEN, New York, N. Y.

WANTED.—A few barrels of light-colored honey. Send sample, and lowest price delivered. A. F. BROWN, Virginia Hotel, Jacksonville, Fla.

WANTED.—Buckwheat honey, both comb and extracted. Let us know what you have, with prices.

TRI-STATE HONEY EXCHANGE,
707 Second Ave., North, Minneapolis, Minn.

WANTED.—Buckwheat comb and extracted honey. Comb to be produced in standard sections, where fences or separators have been used. We prefer to have it packed in new shipping-cases of 24 sections each. All sections to be free from propolis, and well graded. Extracted to be heavy in body, of a good flavor, not mixed with other fall honey. We prefer it shipped in new 5-gallon cans or in small barrels. We want early shipments. State cash price for all grades delivered in Medina. THE A. I. ROOT CO.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices. A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Full line of Root's goods at factory prices. E. M. DUNKEL, Osceola Mills, Pa.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. WHITE MFG. CO., Greenville, Tex.

FOR SALE.—New extractor, four-frame Root automatic, and a quantity of eight-frame supers.

J. G. BURTIS, Marietta, N. Y.

The A. I. Root Co.'s Canadian House, Dadant foundation, bees, queens, honey, wax, poultry supplies, seeds. Write for catalog. THE CHAS. E. HOPPER CO., 185 Wright Ave., Toronto, Ontario.

FOR SALE.—A few hundred cases of 60-lb. cans and cases, all in first-class condition. Must go, and at the low price of 20 cts. per case. Money order or registered letter. J. A. BUCHANAN & SONS, Holliday's Cove, W. Va.

"Root" bee supplies and "American" honey-cans always on hand in carload lots. SUPERIOR HONEY CO., Ogden, Utah. (Branch at Idaho Falls, Ida.) Manufacturers of the celebrated "Weed Process" foundation. Highest prices paid for beeswax.

The *Beekeepers' Review* is now owned and published by the honey-producers themselves. It is THE paper that all honey-producers should support. Twenty-one months, beginning with the April, 1914, number, for only \$1.00. Sample copy free. Address THE BEEKEEPERS' REVIEW, Northstar, Mich.

FOR SALE.—One two-frame Novice extractor, for L. frame, good as new; has been used but a few times, at one-half Root's retail price. Also an old-fashioned extractor, worth keeping as a curiosity, at \$2.50; also ten colonies of Italian bees in good 8-frame hives; plenty honey to winter on. If taken at once, \$3.00 each. No disease. Also 25 half-bodies for 8-frame hives, with sections and starters, just put up, nailed and painted, at half price.

E. T. FLANAGAN & SONS, Belleville, Ill.

WANTS AND EXCHANGES

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1914. Our catalog and price list will be mailed to you free. Order early and get the discounts.

C. E. SHRIVER, Boise, Idaho.

BEES AND QUEENS

FOR SALE.—A fine bee and poultry farm, \$4000.
JAS. HALLENBECK, Altamont, Albany Co., N. Y.

More queens, same price. Speak quick. They are handies. A. J. SEAVEY, Rt. 2, Farmington, Me.

FOR SALE.—One hybrid queen, 30 cts.; 4, \$1.00.
J. F. MICHAEL, Winchester, Ind.

FOR SALE.—70 colonies bees, 100 extracting-supers; paid \$350 this bad season; all for \$200.
O. C. WALL, Cooleemee, N. C.

FOR SALE.—2000 colonies of bees; pure-bred poultry; sweet-clover seed.
W. P. COLLINS, E. C. BIRD, Boulder, Colo.

Phelps' golden bees, \$2.00 per lb. Common bees from outyards, \$1.50 per lb.
C. W. PHELPS & SON, Binghamton, N. Y.

FOR SALE.—Cape Cod bees and queens. Young laying Italians. No disease. Try one.
O. F. SNOW, East Dennis, Mass.

FOR SALE.—180 colonies of bees and complete outfit. Excellent field and market. No disease. Write for particulars. ARTHUR E. AULT, Bradentown, Fla.

Guaranteed purely mated select untested queens, same as advertised before, at 50 cts. each; queens by return mail. Tested, 75 cts. each; select tested, \$1.00 each.
J. M. GINGERICH, Arthur, Ill.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1.00; 6 for \$5.50. WM. S. BARNETT, Barnetts, Va.

QUEENS OF QUALITY.—Three-band leather color, remainder of season, untested, 50 cts. each; select untested, 60 cts. each. Satisfaction guaranteed.
J. I. BANKS, Liberty, Tenn.

Golden Italian queens, good layers and good honey-gatherers; tested, \$1.00; select tested, \$1.25; untested, 60 cts.; dozen, \$7.00.
D. T. GASTER, Rt. 2, Randleman, N. C.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. PHELPS & SON, 3 Wilcox St., Binghamton, N. Y.

Queens and Bees for Sale.—See our large advertisement elsewhere in this journal, and read The A. I. Root Co. letter to us regarding our queens. Write at once for large bee and queen circular.
THE PENN CO., Penn, Miss.

Golden Italian queens that produce golden bees, the brightest kind, gentle, and as good honey-gatherers as can be found. Each \$1.00; six, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00.
J. B. BROCKWELL, Barnett's, Va.

Italian untested queens by return mail. We guarantee our queens to satisfy you. No disease. They are bred for honey-producers. For the rest of the season they go at 50 cts. each, any number. If you are particular about your queens, we wish to supply you.
W. D. ACHORD, Fitzpatrick, Ala.

FOR SALE.—Our three-banded leather-colored husters. Queens are bred from a few select colonies, the record-breakers out of over 700. Tested, \$1.25; warranted, 75 cts.; untested, 50 cts.; select untested, 60 cts. Queens are ready by return mail. Satisfaction and safe arrival guaranteed. No disease. For large quantities write for wholesale prices.
BROWN & BERRY, Hayneville, Ala.

Bees with improved and unimproved land in never failing alfalfa and sweet-clover-seed raising locality. Bees with or without land, on easy payments; labor accepted as part payment; also bees in good isolated queen-rearing locality for early queens; can use a steady man.

OGDEN BEE & HONEY Co., Ogden, Utah.

FOR SALE.—Forty colonies bees, 8-frame Langstroth hives, well painted; no disease; nearly all young queens; plenty of stores; \$4.00 per colony, in any lot desired.
JOHN L. RANDALL,
512 16th St., Greeley, Colo.

FOR SALE.—1000 colonies of bees in 10 apiaries, in the heart of Imperial Valley, where failure is unknown. Profits have averaged more than 100 per cent on investment for five years. Guaranteed free from disease. Will sell any number.
J. EDGAR ROSS, Brawley, Cal.

FOR SALE.—2000 queens during Sept. and Oct. We are all up with our orders. Our fall honey has begun, which means perfect queens. For prices see our ad. in last issue. All orders will be filled by return mail.
GARDEN CITY APIARIES Co.,
Rt. 3, San Jose, Cal.

Golden and three-band Italian and Carniolan queens ready to ship after April 1. Tested, \$1.00; 3 to 6, 95 cts. each; 6 to 12 or more, 90 cts. each. Untested, 75 cts. each; 3 to 6, 70 cts.; 6 or more, 65 cts. each. Bees, per lb., \$1.50; nuclei, per frame, \$1.50. C. B. BANKSTON, Buffalo, Leon Co., Texas.

FOR SALE.—We offer best Italian bees in ten-frame hives, from one to carload, f. o. b. here, or in yards of 100 or more complete with fixtures and location. Cash or reasonable time. If preferred, will rent on shares several years with privilege to buy. Particulars on request.
SPENCER APIARIES, Nordhoff, Cal.

California Italian queens, golden and three-banded, by return mail, select untested, one, \$1.00; 3, \$2.50; 12, \$8.00; tested, \$1.25. Bees by the pound a specialty. One 1-lb., \$1.25; one 2-lb., \$2.25. Safe arrival and satisfaction guaranteed. Correspondence invited. Circular free.
J. E. WING,
155 Schiele Ave., San Jose, Cal.

FOR SALE.—Three-banded Italian queens, from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75 cts.; 6, \$4.25; 12, \$8.00; tested queens, \$1.25; 6, \$7.00; 12, \$12.00. Selected queens, add 25 cts. each to above prices. Breeding queens, \$3.00 to \$5.00 each. For queens in larger quantities, write for prices and circulars.
ROBERT B. SPICER, Wharton, N. J.

REAL ESTATE

FOR SALE.—Half-interest in the bee business in the clover and buckwheat section of New York. This is a good opportunity for an honest young man to start in the business on an extensive scale at a bargain.
M. C. SILSBEE, Rt. 3, Cohocton, N. Y.

FOR SALE.—Little farms in Valley of Virginia. Good fruit, vegetable, and poultry country. Be independent; 5 and 10 acre tracts in Shenandoah Valley, \$250 and up, easy terms. Write for handsome booklet now. F. H. LABAUME, Agr'l Agt. N. & W Ry., Arcade Bldg., Roanoke, Va.

BIG OPPORTUNITIES await you in the South. Land cheapest in America. No long winters, droughts, nor blizzards. Apples, truck, poultry, and livestock are making farmers rich. Industrial and business openings everywhere. "Southern Field" and booklets free.
M. V. RICHARDS,
Land and Ind. Agt. Southern Ry.,
Room 27, Washington, D. C.

MISCELLANEOUS

FOR SALE.—300 bbls. good sprayed Baldwins, young fertilized orchard. Prefer selling in bulk.
J. T. SHEDD, Maple Farm, New Braintree, Mass.

FOR SALE.—200,000 finest-named varieties gladiolus bulbs, among them America, Augusta, Chicago White, Independence, and 25 other leading varieties. If interested, write for bedrock prices.

E. T. FLANAGAN & SONS, Belleville, Ills.

You have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time. A year's dues to the National, and eight months' subscription to our own paper, the *Beekeepers' Review*, beginning with the May number, both for only a dollar. Address, with remittance,

THE BEEKEEPERS' REVIEW, Northstar, Mich.

EGG STOCK.—Pure-bred pedigreed Barred Rock cockerels and hens. Mothers laid over 200 eggs in 10 months. Sires have 15 years of pedigreed breeding for eggs behind them. Grandmother laid 217 eggs in third year of production. Pen of my hens stand eighth among 100 pens in Missouri Egg-laying Contest. Eggs in season. Speak quick. Prices of cockerels, \$5, \$8, and \$10. B. F. W. THORPE, 358 S. Yellow Springs St., Springfield, O.

SITUATION WANTED

WANTED.—A sober young man who has had experience, a position in beyard for the season of 1915. ALEX. ELWOOD, Walton, N. Y.

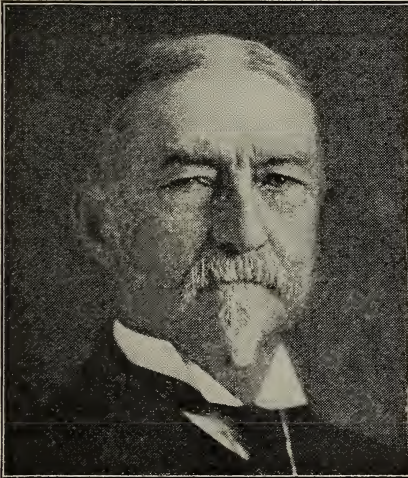
BEEKEEPERS' DIRECTORY

Well-bred bees and queens. Hives and supplies. J. H. M. COOK, 70 Cortland St., New York.

Nutmeg Italian queens, leather color, after June 1. \$1.00 by return mail. A. W. YATES, Hartford, Ct.

QUEENS.—Improved red-clover Italians bred for business June 1 to Nov. 15, untested queens, 75 cts. each; dozen, \$8.00; select, \$1.00 each; dozen, \$10; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.



Edward C. Simmons was born in Frederick, Maryland, September 21, 1839, just three-quarters of a century ago, and is to-day a living exception to that Bible generalization which denies to those of three-score-and-ten the mental vigor and acumen of youth. At the age of fourteen he found his true calling in the hardware business; he rose rapidly from a clerkship to that of partner, and finally to the Presidency of Simmons Hardware Company, in 1874. To-day it has six local houses, judiciously placed, in distributing centers in different parts of the country,

and a business that goes to the four quarters of the globe. He has always held, in his own words, "that business is a thing of ideas," and has illustrated his own aphorism by the force and originality of his methods.

He has a fashion of ignoring unessentials and going straight to the heart of the matter, as was early shown in his perception of the all-prevailing importance of the sales end of every business. This was sometimes considered a paradox, but now a matter of universal recognition. To this he has added the rare faculty of inspiring enthusiasm among his people, so that the esprit du corps prevailing in his company is a matter of national note and comment. His early and vigorous methods startled the conventionality of that day and were regarded as "unsafe." Time has proven that, instead of unsafe, his ways were far-sighted as evidenced by the fact that his was the first mercantile firm to be incorporated in the United States. He has built his great business upon his underlying knowledge of, and sympathy with, human nature, and in few things has this been more evident than in the inspiration which created the famous "Keen-Kutter" brand and his motto, "The recollection of quality remains long after the price is forgotten." His whole life has been devoted to practicing what he preached in one of his well-known sayings, that "a jobber's first duty is to help his customers to prosper."

Among the many remarkable things done by this man, who has frequently been called "the leading merchant of the United States," was his far-sighted act in resigning the Presidency and all active management of the Simmons Hardware Company in 1897, when his oldest son, W. D. Simmons, was elected President, which office he still holds. Two other sons—Edward H. Simmons and George W. Simmons—are Vice-Presidents.

Other American merchants would do well to follow Mr. Simmons' lead in turning over to the younger generation the responsibilities of business before the older head is taken away. He is giving, in an advisory capacity, the benefit of half a century's experience, but allowing the younger men to go on and gain an experience of their own, and he is now happy in the assurance that when the time comes for him to relax even a guiding hand, he can do so with the knowledge that the business is to go on, under competent management, along the lines upon which he built it, and adhering to the principles which will in all probability assure its remaining for many years to come, as it has been for many years past, the largest concern of its kind in the world.

Edward C. Simmons was recently selected by President Wilson for the position of Governor of the Federal Reserve Board, under the new Currency Act, but felt it necessary, on account of his advanced years, not to undertake that great work. Such a service—second to none in importance to the commercial interests of the country—would indeed have been a fitting climax to the successful career of this man, who typifies the highest ideals in American business life.

A KIND WORD FROM FAR-OFF AUSTRALIA.

Mr. A. I. Root:—For a long time I have felt I should like to write you a line; for do you know we have been friends for, it seems to me, years! You tell us in the introduction to the A B C book how much pleasure it gave you to read Langstroth when you first became interested in bees. Well, Mr. Root, you will now know just how I felt when I first opened your A B C of Bee Culture, for it was your work then. Since E. R. and H. H. R. have had more to say both in the A B C and GLEANINGS I have also made myself believe I am their friend. Indeed, nothing could give me more pleasure than to be able to pay a visit to Medina, and see you. I feel that the Root family are (or, rather, could be) my real friends.

J. W. MURRAY.

Gannons Creek, Hastings River, N. S. W., Australia, April 28.

Many thanks, my good friend. It would give us great pleasure to show you around and have you get acquainted with the different ones of our family at the Home of the Honey-bees.

SPECIAL NOTICES

BY OUR BUSINESS MANAGER.

SWEET-CLOVER SEED.

Having secured several lots of sweet-clover seed, we shall be pleased to quote a price to those interested if you will write naming the quantity you can use and the variety you prefer.

SIX PER CENT DISCOUNT FOR OCTOBER CASH ORDERS.

To those who buy now for next season, sending remittance with the order during the month of October subject to the conditions named below, we allow 6 per cent discount.

This discount will apply on all articles listed in our regular catalog at current corrected prices to date except as follows:

Tinned wire, paint, Bingham smokers, Porter beescapes, glass and tin honey-packages, scales, bees and queens, bee-books, papers, labels, printed matter, bushel boxes, seeds, and specialties not listed in our general catalog. Where any or all of these articles in a general order do not exceed fifteen per cent of the whole order, the discount may be deducted from the whole order, including these items which are otherwise excepted.

SPECIAL NOTICES

BY A. I. ROOT

DRY MAJORITY INCREASES; VIRGINIA'S VOTE AGAINST SALOONS GROWS AS RETURNS COME IN.

On page 787 we mention Virginia's giving a dry majority of 25,000 for prohibition. The following day it was corrected to 21,000; but to-day, Sept. 25, we clip the following from the *Plain Dealer*:

RICHMOND, VA., Sept. 23.—While complete returns from the Statewide prohibition election still are lacking, figures received show voters placed Virginia in the dry column by a majority of more than 32,835. The victory of the drys will be considerably increased when returns from counties which have yet to be heard from are received.

A feature of the election was that cities which had been counted upon to give a majority for the wets, gave 1315 for the drys. Richmond, Norfolk, Alexandria, and Williamsburg were the only cities returning majorities for local optionists.

May the Lord be pleased for the above addition to the good news.

Convention Notices

The Panhandle Beekeepers' Association will hold its semi-annual meeting Oct. 13, 1914, at Grand Central Hotel, Market Street, Wheeling, W. Va.

JOHN RUDE, Sec.

The annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association will be held at the Courthouse in Rockford, Ill., on Tuesday, Oct. 20, 1914. All interested in bees are invited to attend.

B. KENNEDY, Sec., Rockford, Ill.

The twenty-fourth annual meeting of the Illinois State Beekeepers' Association will be held at the State House, Thursday and Friday, Nov. 19 and 20. Hon. N. E. France, of Wisconsin, will be with us. His subject will be, "Short Cuts." Prof. J. G. Mosier, University of Illinois, will speak on "Sweet Clover." Mr. C. P. Dadant, of Hamilton, Ill., and Dr. E. F. Phillips, of Washington, will speak on "Temperature and Moisture of the Hive in Winter." Come prepared to help make it a good meeting.

Springfield, Ill.

JAS. A. STONE, Sec.

EXHIBITS AT THE LOUISIANA STATE FAIR.

The newly organized Louisiana State Beekeepers' Association will meet on Monday, Nov. 9, at 10 o'clock, for the purpose of transacting any business that may properly come before the body. It is earnestly desired that every one interested in bees be present. An endeavor is being made to secure good speakers to make talks on bee culture.

Those wishing to make exhibits at the fair should take up the matter at once with Mr. Louis N. Brueggerhoff, Secretary of the Fair, Box 1100, Shreveport, La.

Any one desiring to become a member of the Association may do so by sending his dues to L. T. Rogers, Box 361, Shreveport, La. Dues are \$1.00 a year for the National and 50 cents a year for the State. National members will receive free the *Beekeepers' Review*, official paper of the National Association. Beekeepers may belong to the State Association and not to the National, if desired.

G. FRANK PEASE, President.

L. T. ROGERS, Secretary-Treasurer.

The fall convention of the Connecticut Beekeepers' Association in the Old Senate Chamber, State Capitol, Hartford, Conn., will be held on Saturday, October 24, 1914.

Morning session will be devoted to informal gathering, payment of dues, etc. Afternoon session, regular business, report of Connecticut Fair Committee, and addresses. It is expected that important action will be taken at this meeting relative to the establishment of an apiary at the Connecticut Agricultural College, for which the association has been working for several years.

The program committee announces the following: Mr. O. F. Fuller, of Blackstone, Mass., president of Worcester County Beekeepers' Association, and originator of the famous "Fuller candy" for winter feeding, will address us on "Experiments with Bee Foods," demonstrated, and "Rearing Queens in the Brood-chamber with a Laying Queen." Those who failed to hear Mr. Fuller at Amherst on June 12, last year, should not miss this opportunity. The remainder of the program follows:

Lyman C. Root (subject to be chosen).

W. K. Rockwell, "Signs of a good queen."

John Thorret, "Wintering."

Question-box, etc.

L. WAYNE ADAMS, Sec.

"LOVE AT FIRST SIGHT," AND "BRINGING IN THE SHEAVES."

I have been taking GLEANINGS since May 1, 1910. I like it very much on account of the valuable information it has given me in regard to beekeeping, and for the good I have received by reading *Our Homes*. If I were a man of means I would place GLEANINGS in every home in our village, as I think *Our Homes* would bring more people in touch with God than all of our churches do here. Our churches are all right; but would it not be better for our ministers and all of those who attend church to go out among those who have fallen from God, and talk to them about Jesus Christ, and teach them to love him, and pray to him to help them that they may become better men and women? Let them get out before the people and speak for Jesus. It will be far better than to wait for them to come to the church. I will quote a beautiful verse right here:

Never be afraid to speak for Jesus,

Think of what a word can do;

Never be afraid to speak for Jesus—

He who loves and cares for you.

I am very fond of GLEANINGS, but it was not the cause of my becoming a beekeeper. It was the A. I. Root catalog of bee supplies. I traded at the store of Beach & Hister. Mr. Hister handed me a catalog and said, "You had better go into the bee business." It was a case of "love at first sight." I bought two hives of bees the next day, and here I am to-day with 42 hives, "bringing in the sheaves," thank God, Mr. Root, and Mr. Hister. I raised several queens this spring, and introduced them to nuclei in West spiral cages.

Rhinecliff, N. Y., June 24. PETER WHEELER.

Beeswax Wanted

We offer for average clean beeswax 25 cts. per pound in cash, or 27 cts. in trade, delivered at San Antonio. If you have any good wax ready for the market, ship it to us, mailing shipping-receipt together with letter stating gross and net weight. To avoid any possible delay be sure to label your shipment so that we may identify same when received.

Honey-cans

DON'T FORGET that this company—AND NO OTHER—carries the **STANDARD CONTINENTAL CANS**. They are the right size; they won't leak; the ears are crimped into the top of the cans so they won't come off. **BE SURE THAT YOUR CANS ARE THIS KIND**, then you will know that your honey is going to reach its destination just like it leaves you.

Remember

That we at all times carry a complete stock of **"ROOT'S BEEKEEPERS' SUPPLIES"** on hand ready for prompt shipment. For large orders write for estimate.

Toepperwein & Mayfield
Nolan and Cherry Sts. San Antonio, Texas

BOOKS FOR BEEKEEPERS AND OTHERS

Any of these books on which postage is not given will be forwarded by mail postpaid, on receipt of price.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice that you can judge of the size of the books very well by the amount required for postage on each.

Postage Price without Postage
PRACTICAL WORKS ON BEE CULTURE.

25	A B C of Bee Culture, cloth.....	2 00
25	" " half leather.....	2 75
25	" " German, paper.....	2 00
25	" " German, cloth.....	2 00
25	" " French, cloth.....	2 00

10 | Advanced Bee Culture.....1 00
| Fifty Years Among the Bees. New edition. 1 00

By Dr. C. C. Miller. Dr. Miller is too well known among the beekeeping fraternity to need any introduction. His book is charmingly written, and covers his experience in detail.

15	Cook's Manual, cloth.....	1 00
5	Doolittle on Queen-rearing.....	95
15	Langstroth on the Honeybee, Revised edition.....	1 10
10	Quinby's New Beekeeping.....	90
5	British Beekeepers' Guide-book, by Thomas William Cowan, England.....	95
5	The Honeybee, by Thos. Wm. Cowan.....	95
10	How to Keep Bees.....	90
15	Modern Bee-farm. By S. Simmins. Cloth bound.....	1 85
	| Wax Craft, Cowan.....	1 00

POPULAR BOOKS ON BEE CULTURE.

11	The Bee People, Margaret W. Morley.....	1 40
11	The Honey-makers, Margaret W. Morley.....	1 40
11	Life of the Honeybee, Materlinck.....	1 30
11	The Swarm, Materlinck.....	1 30
7	The Bee-master of Warrilow, Edwards.....	50
10	Lore of the Honeybee.....	1 90

| Alexander's Writings on Practical Bee Culture. By the late E. W. Alexander, who conducted the largest apiary in the United States. A wonderfully interesting discussion of beekeeping in its broadest phases. Any one can understand it; 35 chapters, 95 pages. Paper bound, 50 cts. postpaid.

| The Management of Out-apiaries. By G. M. Doolittle. Packed full of most valuable information ever given to beekeepers. A practical and interesting book by a very successful apiarist. Sale has reached nearly 5000 copies; 60 pages, paper bound, 50 cts. postpaid.

MISCELLANEOUS HAND-BOOKS.

5	A B C of Carp Culture, by Geo. Finley....	25
7	A B C of Potato Culture, Terry. New edition, revised and enlarged; paper, 50c; cloth, 75c; mail, 85c.	

This is T. B. Terry's first and most masterly work. It has really made a revolution in potato growing, and has been reprinted in several foreign languages. By getting the ground in proper condition to grow great crops of clover, and turning this under, Terry succeeded, not only in getting more potatoes, but even better ones, and in producing them at less expense also, than by any plan or system before the time he began his experiments in 1885. The book has already passed through three editions of many thousands. It not only includes potato-growing in the United States, but in Bermuda, the Island of Jersey, and other warmer parts of the world where "new potatoes" are raised for the express purpose of getting the high prices in the cities during January, February, and March. The book also gives special attention to the different and best methods for preserving and keeping seed potatoes in the very best condition to plant in all these different localities.

5 | A B C of Strawberry Culture, by T. B. Terry. New edition, revised and enlarged; paper, 45c; cloth, 68c; by mail, 75c.

After Terry's potato-book had obtained such a kind reception from farmers, market-gardeners, and others,

he was induced to give his plan of growing strawberries, as he did potatoes, by plowing under great crops of clover, and, like the potato-book, his writings gave a new impetus to strawberry-growing; in fact, some of his pupils declare that, aside from the picking, they can grow strawberries almost as cheaply per bushel as potatoes. By following Terry's teachings, thousands of people have not only been able to give their families but the whole wide world better strawberries, and more of them, than they ever saw before.

6	Asparagus Culture.....	40
6	Alfalfa Culture.....	40
	| Barn Plans and Out-buildings.....	90
2	Celery for Profit, by T. Greiner.....	25

The first really full and complete book on celery culture, at a moderate price, that we have had. It is full of pictures, and the whole thing is made so plain that a schoolboy ought to be able to grow paying crops at once without any assistance except from the book.

10 | Fruit Harvesting, Storing, Marketing, etc.... 75

It has been well said that it is an easier matter to grow stuff than to sell it at a proper price after it is grown; and many men fail, not because they are inexperienced in getting a crop, but because they do not know how to sell their crops to the best advantage. This is the first book of the kind we have had as an aid in selling. It not only tells all about picking, sorting, and packing, but gives all the best methods for storing for one or two days or a longer time. It also tells about evaporating and canning when there is a glut in the market. It discusses fruit packages and commission dealers, and even takes in cold storage. It is a new book of 250 pages, full of illustrations. Publisher's price, \$1.00.

| Farming with Green Manures, postpaid... 90

This book was written several years ago; but since competent labor has got to be so expensive and hard to get, many farmers are beginning to find they can turn under various green crops much cheaper than to buy stable manure and haul and spread it—cheaper, in fact, than they can buy fertilizers. This book mentions almost all plants used for plowing under, and gives the value compared with stable manure. Some of the claims seem extravagant, but we are at present getting good crops and keeping up the fertility by a similar treatment, on our ten-acre farm.

7	Farm, Gardening, and Seed-growing.....	90
10	Fuller's Grape Culturist.....	1 15
5	Garden and Farm Topics, Henderson.....	60
12	Gardening for Pleasure, Henderson.....	1 10

While "Gardening for Profit" is written with a view of making gardening pay, it touches a good deal on the pleasure part, and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations. (Retail price, \$2.00.)

12 | Gardening for Profit.....1 10

This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts. (Retail price \$2.00.)

8 | Gardening for Young and Old, Harris.... 90

This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground, and this matter of adapting it to young people as well as old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

Postage Price without Postage

3| Grasses and Clovers, with Notes on Forage Plants..... 20

This is by Henry A. Dreer, author of the book "Vegetables under Glass" that has had such a large sale of late. This little book tells how six tons of grass has been grown to the acre, and gives much other valuable matter.

10| Greenhouse Construction, by Prof. Taft..... 1 15

This book is of recent publication, and is as full and complete in regard to the building of all glass structures as is the next book in regard to their management. Any one who builds even a small structure for plant-growing under glass will save the value of the book by reading it carefully.

12| Greenhouse Management, by Prof. Taft..... 1 15

This book is a companion to Greenhouse Construction. It is clear up to the times, contains 400 pages, and a great lot of beautiful half-tone engravings. A large part of it is devoted to growing vegetables under glass, especially Grand Rapids lettuce, as well as fruit and flowers. The publisher's price is \$1.50, but as we bought quite a lot of them we can make a special price as above.

5| Gregory on Cabbages, paper..... 20

5| Gregory on Squashes, paper..... 20

5| Gregory on Onions, paper..... 20

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

7| Handbook for Lumbermen..... 05

5| Home Pork-making; 125 pages, illustrated. 40

I think it will pay well for everybody who keeps a pig to have this book. It tells all about the care of the pig, with lots of pictures describing cheap pens, appliances, all about butchering, the latest and most approved short cuts; all about making the pickle, barreling the meat, fixing a smoke-house (from the cheapest barrel up to the most approved arrangement); all about pig-troughs; how to keep them clean with little labor; recipes for cooking pork in every imaginable way, etc. Publisher's price is 50 cts., ours as above.

15| How to Make the Garden Pay..... 1 35

By T. Greiner. Those who are interested in hot-beds, cold-frames, cold green-houses, hot-houses, or glass structures of any kind for the growth of plants, can not afford to be without the book. Publisher's price, \$2.00.

10| How to Keep Well and Live Long..... 90

The above book by T. B. Terry is, in my opinion, destined to relieve more pain, sickness, and death than any other book in the whole world that has ever come to my knowledge. This is pretty strong language, I admit; but since Mr. Terry commenced, years ago, to urge the importance of pure air, pure water, and a simple diet of good simple food in moderate quantities, the whole wide world, doctors included, seems to be gradually falling in with him. Of course, other good and wise men commenced a similar crusade for better health long before Terry did; but he seems to have a happy faculty of getting hold of people and keeping their attention. After you once start in with the book you will be pretty sure to read it to the end, and you will ever after be a better and happier man or woman for having read it. We have a special low price for clubbing with GLEANINGS is, both for \$1.50 If you have already a copy, we will send you a new one for 75 cents postpaid. If you have not, only a short time ago, we have 50 copies.

and the Sugar-bush..... 25

How to Make and How to Use paper covers..... 30

in cloth covers..... 65

Altrist, postpaid..... 1 25

as for Profit..... 40

up to the times, and includes both the old culture and the new method. The book is fully rated, and written with all the enthusiasm; even if one is not particularly interested in the business, almost any person who picks up Greiner's books will like to read them through.

8| Practical Floriculture, Henderson..... 1 10

0| Small-fruit Culturst, Fuller..... 75

Postage Price without Postage

2| Experiments in Farming, by Waldo F. Brown 08

This little book ought to be worth its cost for what is said on each of the four different subjects; and the chapter on cement floors may be worth many dollars to anybody who has to use cement for floors, walks, or any thing else. In fact, if you follow the exceedingly plain directions you may save several dollars on one single job; and not only that, get a better cement floor than the average mason will make.

10| Our Farming, by T. B. Terry..... 75

Same, paper cover, postpaid..... 50

In which he tells "how we have made a run-down farm bring both profit and pleasure."

If ordered by express or freight with other goods, 10 cts. less.

10| Talks on Manures..... 1 35

By Joseph Harris. Written in conversational style, which makes it very interesting reading. It covers the subject very completely; contains numerous analyses of manures and comparative tables. The use of technical language is avoided, which makes the book of greatest value to the practical farmer. A book of 366 pages, nicely bound in cloth.

10| The Dollar Hen..... 90

The above book will be clubbed with GLEANINGS for one year at \$1.50; or if you have already subscribed a year or more in advance you can have the book postpaid for 75 cents.

My opinion is, that "The Dollar Hen" is not only one of the best books on poultry that we have at the present time, but it is worth nearly as much as a dozen other books. Perhaps this is extreme, but we have very few books that are strictly up-to-date, and still fewer that pitch right into the superstitions and humbugs now scattered all through our poultry books and journals.

5| The New Rhubarb Culture..... 40

Whenever apples are worth a dollar a bushel or more, winter-grown rhubarb should pay big. It does not require an expensive house nor costly appliances. Any sort of cellar where it will not freeze is all right for it; and the small amount of heat necessary to force the rhubarb costs very little. The book is nicely bound in cloth, full of illustrations, mostly photos from real work, 130 pages. Every market-gardener should have this book for the lessons taught indirectly in regard to forcing other crops besides rhubarb. Publisher's price \$50c.

5| Tile Drainage, by W. I. Chamberlain..... 45

Fully illustrated, containing every thing of importance clear up to the present date.

The single chapter on digging ditches, with the illustrations given by Prof. Chamberlain, should alone make the book worth what it costs to every one who has occasion to lay ten rods or more of tile. There is as much science in digging as in doing almost any thing else; and by following the plan directed in the book, one man will often do as much as two men without this knowledge.

5| Tomato Culture..... 35

In three parts. Part first.—By J. W. Day, of Crystal Springs, Miss., treats of tomato culture in the South with some remarks by A. I. Root adapting it to the North. Part second.—By D. Cummins, of Conneaut, O., treats of tomato culture especially for canning factories. Part third.—By A. I. Root, treats of plant-growing for market and high-pressure gardening in general.

3| Winter Care of Horses and Cattle..... 25

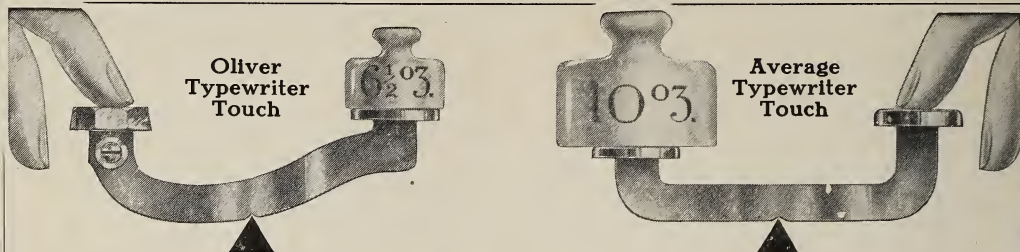
This is friend Terry's second book in regard to farm matters; but it is so intimately connected with his potato-book that it reads almost like a sequel to it. If you have only a horse or a cow, I think it will pay you to invest in a book. It has 44 pages and 4 cuts.

8| What to Do, and How to be Happy while Doing It..... 65

The above book by A. I. Root is a compilation of papers published in *Gleanings in Bee Culture* in 1886, '7, '8. It is intended to solve the problem of finding occupation for those scattered over our land out of employment. The suggestions are principally about finding employment about your own homes. The book is mainly upon market-gardening, fruit-culture, poultry-raising, etc. Illustrated, 188 pages; cloth.

8| Same, paper covers..... 40

The A. I. Root Company, Medina, Ohio.



5 Tons Less Typewriter Touch!

Every Day the Silent Seven Oliver Saves this Load

Freedom from mountains of needless labor for a world of typewriter users. Thousands have gained it. And you can, too. For we give you the most conclusive lesson that typewriter science has revealed. Here are the settled facts---if you find them incredible make this test yourself:

Touch by Weight

All important makes of typewriters are tested in our laboratories. Standard ounces are placed on the keys till sufficient to make the type print.

These tests prove the *average* machine demands *ten* ounces of pressure from the operator's finger.

Yet the Silent Seven Oliver writes when pressure on the type keys is $6\frac{1}{2}$ ounces.

5 Tons Less a Day

Thus the Oliver at every stroke eases your load by $3\frac{1}{2}$ ounces. In a single day's writing this saving is multiplied 50,000 times. Hence the amazing sum of 175,000 ounces -- over 10,000 pounds -- *five tons* of human energy saved by the Oliver per day.

Sometimes this runs a little less--often it is more; so we give you the average in a series of easy tests.

Win with the Oliver

Not since we first gave visible writing to the world has the labor of thousands been lightened so.

Then we ended all carriage lifting. Now every day we save each typist a 5-ton load. Every day the Oliver operators work in winning trim till the clock says quit. Then go home fresh--with a big day's work all done. And the top-notch pay-checks go to these clear-brained experts. More work and less fatigue will win for you, too.

The Silent Seven

A benefaction to all mankind -- this new model Oliver. Visible reading, visible writing, universal key-board arrangement, with fewest keys of any typewriter. All epoch-making triumphs. And our cushioned key-board, anchor keys, and automatic spacer, too. A score of improvements and refinements that raise this typewriter to the pinnacle of attainment.

Pay 17c a Day

The price of the Silent Seven Oliver has not been increased a dollar. Yet we give you by careful estimate *25 per cent more value*. And we let you buy on our popular purchase plan -- 17c a day. Scarcely more than typewriter rent.

The OLIVER 7 Typewriter No. 7



The Standard Visible Writer

Typewriter Book Free

Let us send you a copy fresh from the press--a priceless book to any man or woman who will use or ever own a typewriter.

It fully pictures and describes the new Silent Seven Oliver; it coaches you on points that others dare not give. It shows how the novice can start and write at once, without schooling, without skill.

Send to us now--we will bring this book free by registered mail, postpaid.

Choice Openings for Local Oliver Agents---APPLY TODAY

You, too, can earn a handsome income as exclusive agent for the new Silent Seven Oliver in your community. Over 15,000 hustlers are making good money this way. No experience is necessary. For we train you at home--FREE--through the Oliver School of Practical Salesmanship.

Often we furnish the names of prospective buyers to our local agents. Often our traveling salesmen

help you to close sales. But you get the profit on every typewriter sold in your territory.

Ask for our special terms on sample typewriter agents who are in earnest. Write us today--make your application before your territory is assigned. You assume no obligation, and Opportunity Book comes postpaid by return mail--FREE.

The Oliver Typewriter Co., Oliver Typewriter Bldg., Chicago

Gleanings in Bee Culture CLUBBING OFFERS

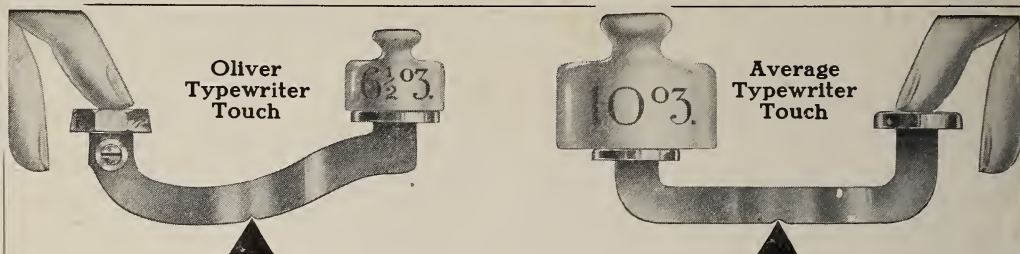
Gleanings in Bee Culture

(ONE YEAR)

	{ with the A B C and X Y Z of Bee Culture, the leading text-book on beekeeping. }	\$ 2.50
“	{ with Dr. Miller's Fifty Years Among the Bees. }	1.50
“	{ with W. Z. Hutchinson's Advanced Bee Culture. }	1.50
“	{ with T. B. Terry's great book, How to Keep Well and Live Long. }	1.50
“	{ with Milo Hastings' book on practical poul- try culture, The Dollar Hen. }	1.50
“	{ with the new revised edition of The A B C of Potato Culture, by T. B. Terry and A. I. Root. }	1.00
“	{ with a choice of any one of the following books from GLEANINGS library: Townsend Bee-book, Management of Out-apiaries, Al- exander's Practical Bee Culture, Natural History of the Honeybee. }	1.00
“	{ with a Root Standard Smoker (tin); diam- eter of the barrel 3¼ inches. One of the best smokers made, both in principle and construction. }	1.75
“	{ with a No. 2 Bee-veil. This veil is made of cotton tulle with silk tulle face, and is ad- justable to any medium-sized hat. It has an elastic cord in both the upper and lower hems. }	1 35
“	{ with a pair of Bee-gloves. Our special bee- gloves are made with long sleeves and of heavy drilling for wear in the bee-yard. (Sizes: Small, medium, or large.) }	1 25

Canadian postage on each of above combinations 30c extra; foreign postage, 60c extra.

The A. I. Root Company
Medina, Ohio



5 Tons Less Typewriter Touch!

Every Day the Silent Seven Oliver Saves this Load

Freedom from mountains of needless labor for a world of typewriter users. Thousands have gained it. And you can, too. For we give you the most conclusive lesson that typewriter science has revealed. Here are the settled facts---if you find them incredible make this test yourself:

Touch by Weight

All important makes of typewriters are tested in our laboratories. Standard ounces are placed on the keys till sufficient to make the type print.

These tests prove the *average* machine demands *ten* ounces of pressure from the operator's finger.

Yet the Silent Seven Oliver writes when pressure on the type keys is 6½ ounces.

5 Tons Less a Day

Thus the Oliver at every stroke eases your load by 3½ ounces. In a single day's writing this saving is multiplied 50,000 times. Hence the amazing sum of 175,000 ounces — over 10,000 pounds — *five tons* of human energy saved by the Oliver per day.

Sometimes this runs a little less—often it is more; so we give you the average in a series of easy tests.

Win with the Oliver

Not since we first gave visible writing to the world has the labor of thousands been lightened so.

Then we ended all carriage lifting. Now every day we save each typist a 5-ton load. Every day the Oliver operators work in winning trim till the clock says quit. Then go home fresh—with a big day's work all done. And the top-notch pay-checks go to these clear-brained experts. More work and less fatigue will win for you, too.

The Silent Seven

A benefaction to all mankind — this new model Oliver. Visible reading, visible writing, universal key-board arrangement, with fewest keys of any typewriter. All epoch-making triumphs. And our cushioned key-board, anchor keys, and automatic spacer, too. A score of improvements and refinements that raise this typewriter to the pinnacle of attainment.

Pay 17c a Day

The price of the Silent Seven Oliver has not been increased a dollar. Yet we give you by careful estimate *25 per cent more value*. And we let you buy on our popular purchase plan — 17c a day. Scarcely more than typewriter rent.

The OLIVER 7
Typewriter No. 7



The Standard Visible Writer

Typewriter Book Free

Let us send you a copy fresh from the press—a priceless book to any man or woman who will use or ever own a typewriter.

It fully pictures and describes the new Silent Seven Oliver; it coaches you on points that others dare not give. It shows how the novice can start and write at once, without schooling, without skill.

Send to us now—this book free by mail, post-paid.

Choice Openings for Local Oliver Agents---APPLY TODAY.

You, too, can earn a handsome income as exclusive agent for the new Silent Seven Oliver in your community. Over 15,000 hustlers are making good money this way. No experience is necessary. For we train you at home—FREE—through the Oliver School of Practical Salesmanship.

Often we furnish the names of prospective buyers to our local agents. Often our traveling salesmen

help you to close sales. But you get the profit on every typewriter sold in your territory.

Ask for our special terms on sample typewriter, agents who are in earnest. Write us today—make your application before your territory is assigned. You assume no obligation, and Opportunity Book comes postpaid by return mail—FREE.

The Oliver Typewriter Co., Oliver Typewriter Bldg., Chicago